TERRA

THE NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY
VOL. 27, NO. 1 SEPTEMBER/OCTOBER 1988

MUSEUM ON THE MOVE

Museum Breaks Ground for Schreiber Hall of Birds. June 13 marked the official ground breaking ceremonies for the Natural History Museum's Ralph W. Schreiber Hall of Birds. Wearing hard hats donated by the Ray Wilson Construction Company, donors, supporters, trustees, and friends gathered at the museum to begin construction on the new exhibition space. The hall is a tribute to Dr. Schreiber, who died of cancer on March 29, 1988, at the age of 45. In announcing that the new Hall of Birds will be named in Dr. Schreiber's honor, Dr. Craig Black, director of the museum, cited the numerous contributions Schreiber made to the field of ornithology and to the Natural History Museum, both as Curator and Head of the Birds and Mammals Section and as the creative force behind the innovative concept for the hall.

Scheduled for completion in late 1989, this 17,000-square-foot interactive environmental hall and ornithological research center will be a model for other museums. Representing a significant advance in informal science education, the Schreiber Hall of Birds will convey accurate biological information through interactive exhibits that entertain as they educate. Schreiber's widow, Elizabeth Anne, is ornithologist-coordinator for the Hall.

The total cost for the new hall, designed by Promotion Products Incorporated of Portland, Oregon, is $4.9 million. To date, $3.9 million of this amount has been raised. Founding Patrons of the Bird Hall, who wielded golden crowbars at the ground breaking ceremony, are the Ahmanson Foundation, represented at the luncheon by Lee Walcott and Karen Hoffman; the Harry and Grace Steele Foundation and Mr. and Mrs. Richard Steele, represented by George V. Caldwell, Vice Chairman of the Bird Hall Leadership Committee; the County of Los Angeles, with representatives of Deane Dana, Pete Schabarum, and Michael Antonovich; Tom Pearman of Community Bank, representing an anonymous donor; and Mr. and Mrs. Robert E. Petersen. Adding to the success of the occasion, Mr. Frank Pachmayr made a significant contribution to the construction of the new hall. Also honored were the Distinguished Supporters of the Schreiber Hall of Birds: McDonnell Douglas, Mrs. Reese H. Taylor, Unocal, Union Bank, Mr. and Mrs. George V. Caldwell, the Joseph Drown Foundation, and Mr. and Mrs. G. Everett Miller. Other contributors recognized during the afternoon's activities were Dr. John House and Dr. Patricia House and Camron Cooper.

Special guests at the ground breaking and luncheon included actors Eddie Albert and Jimmy Stewart, Museum trustee Gloria Stewart, and Sam the Olympic Eagle.

Newly Created Schreiber Fund for Ornithology Research. To honor the scientific work of Dr. Ralph W. Schreiber, the Natural History Museum has established the Schreiber Ornithology Research Fund. Contributions to this fund help support advanced research and studies on birds and bird behavior begun at the museum under Schreiber's direction. Over $11,000 has so far been contributed to the fund by friends of the Schreibers and the museum, as well as people who wish to ensure that this important research continues. Museum members and supporters interested in making a gift to the Research Fund or to the Hall of Birds should contact the Museum Development Office at (213) 744-3307.

Diamond Jubilee Edition Dinosaur Ball a Dazzling Success. The opportunity to dine and dance among the dinosaurs while taking part in the museum's major fund-raising event of the year attracted museum members to this year's Diamond Jubilee Edition Sixth Annual Dinosaur Ball. This year's festivities, which took place on Saturday, April 23, exceeded the Alliance Board's funding goal of $300,000, thanks to a generous matching gift from George C. Page, the ball's Diamond Jubilee Sponsor. In appreciation of the Page gift, the African Mammal Hall was renamed the "George C. Page Mammal Hall" for the evening.

Dinosaur Ball Committee Chairman Diana Jacobs coordinated this event's celebration of the museum's seventy-fifth anniversary. With the spectacular Empress Marie Louise Diadem and the Napoleon Necklace, on loan from the Smithsonian Institution, the House of Harry Winston displayed $15 million worth of its most exquisite jewels.

Evonne and Wayne Woods of The Woods at the Four Seasons Hotel created an atmosphere of mystery and romance, in which Rococo served an elegant dinner featuring rack of veal *chateau*. After dinner, guests danced to the music of Ron Rubin's orchestra surrounded by diamonds reflected from the walls through the creativity of Images By Lighting.

This year the ball honored Diamond Couples who supported the evening by increasing the level of their donation. A Diamond Jubilee Dinosaur Ball tote

Continued on page 24

BOARD OF TRUSTEES OF THE NATURAL HISTORY MUSEUM FOUNDATION

Robert S. Attiyeh
Chairman
Stephen R. Onderdonk
President
Otis Chandler
Vice President
David Comsky*
Vice President
Leslie C. Curtis, Jr.
Vice President
Mrs. Justin Dart
Vice President
William A. Mingst
Vice President
Charles O. Parker II
Vice President
Richard C. Seaver
Treasurer
Dr. M. Norvel Young*
Secretary
Richard Call, M.D.*
Assistant Secretary
Alan W. Hart
Assistant Treasurer
Ed N. Harrison*
President, Board of Governors
F. Otis Booth, Jr.
Mrs. Raoul Boudjakdji
Judge William Matthew Byrne, Jr.**
George V. Caldwell
James H. Cheney
H. Frederick Christie
Camron Cooper
Mrs. Arthur L. Crowe
Matthew K. Fong*
A. Frederick Gerstell
Frederic E. Giersch, Jr.*
Albert B. Glickman**
Mrs. Stephen E. Griffith
John F. Harrigan
Deloris Hollman*
Ivan J. Houston
Ray R. Irani
Mrs. Robert G. Irvin*
Linda Dyer Knight
Mrs. Kenneth Leventhal
Jose I. Lozano
William M. Marcussen*
Dan L. McGurk
G. Everett Miller**
George C. Page
Robert E. Petersen
Mrs. Thomas Reddin
Susan F. Rice
Sheldon Richman
Richard J. Riordan
Nelson C. Rising
Joseph Ryan
Marc A. Seidner*
Mynatt Smith*
Mrs. James Stewart
Dr. Mae Sue Talley**
Richard S. Volpert*
Frank G. Wells
John G. Wigmore*
Gin D. Wong
Evelle J. Younger*
William R. Zimmerman

*Governor
**Emeritus

ALLIANCE BOARD OF DIRECTORS

Mrs. Kenneth Leventhal
President
Mrs. Thomas Reddin
Past Chairman
Robert S. Attiyeh
Walter S. Berkman
William J. Bird
Neal H. Brockmeyer
Mrs. Francis L. Dale
Mrs. C. Warren Driver
J. Shelton Ellis, Jr.
Mrs. Robert Feinerman
Maureen Focht
Judge Ronald M. George
Robert Graham
Mrs. Allan M. Herbert
Barbara J. Hogue
Dr. Patricia House
Mrs. David Jacobs
Marshall I. Kass
Mrs. Lindbergh Kawahara
Dr. Len Kleinman
Carole Sumner Krechman
Dr. Frank Lavac
Ernest M. Lever
Marvin H. Lewis
Mrs. Hugh H. Logan
Allan G. Lowy
Douglas J. MacDonald
Mrs. Maurice Machris
Ray T. McCullough
John L. Meek
William A. Mingst
Dr. Elliot Mininberg
Mrs. Roy Nutt
Stephen R. Onderdonk
A. F. Osterloh III
Robert Patterson
Mrs. Dan Pocapalia
Sheldon Richman
Mrs. Charles Rinsch
Mrs. Charles E. Ryker
Mrs. Leon I. Singer
Mrs. Irving Stone
Harry H. Tytle
Mrs. Dwight G. Vedder
Frank J. Vodhanel
Lorraine P. Young

TERRA

THE MEMBERS' MAGAZINE
OF THE NATURAL HISTORY MUSEUM
OF LOS ANGELES COUNTY
AND THE PAGE MUSEUM
OF LA BREA DISCOVERIES
VOL. 27, NO. 1 SEPTEMBER/OCTOBER 1988

DIRECTOR
Craig C. Black
CHIEF DEPUTY DIRECTOR
Mark A. Rodriguez

COVER: This rattle, fashioned from alder and birch wood and human hair, and its casket are two of the most highly personal works in the exhibition **Lost and Found Traditions** (October 8–December 11, Olympics Gallery). It was carved by Victor Reece of the Coastal Tsimshian tribe who lives at Prince Rupert, British Columbia. Photographed by Bobby Hansson.

LOS ANGELES COUNTY BOARD OF SUPERVISORS
Deane Dana, Chairman
Fourth District
Peter F. Schabarum, First District
Kenneth Hahn, Second District
Edmund D. Edelman, Third District
Michael D. Antonovich, Fifth District

HEAD OF PUBLICATIONS
Robin A. Simpson

EDITOR
Kathy Talley-Jones

ASSOCIATE EDITOR
Harry J. Pack

EDITORIAL BOARD
Craig C. Black / Daniel M. Cohen / Janet R. Fireman / Joan Grasty / John M. Harris / Peter C. Keller / William A. Mingst / Harry J. Pack / Robin A. Simpson / Kathy Talley-Jones

DESIGN
Armin Krumbach

MUSEUM PHOTOGRAPHERS
Dick Meier/John De Leon/Don Meyer

ADVERTISING SALES REPRESENTATIVE
Western Media Sales
50 West Hillcrest Drive, Suite 215
Thousand Oaks, CA 91360
Telephone: 805 / 496-3500
Telex: 182640 WKVG

TERRA is published bimonthly by the Natural History Museum of Los Angeles County and is sent as a benefit to museum members. Single copy price: $2.50. Subscriptions: $12 per year. For membership information, visit the Membership Office at the Natural History Museum or call 213/744-3426. All other inquiries can be referred to the Publications Office, Natural History Museum, 900 Exposition Boulevard, Los Angeles, CA 90007. Printed by North Hollywood Printing Co., Inc. Color separations by Toppan Graphic Arts Center West. Typography by R S Typographics.

All Rights Reserved. Reproduction in whole or in part without permission is prohibited.

ISSN 0040-3733

CONTENTS

Footloose and Fancy Free: Tracking the Migratory Monarch Butterfly
by Christopher D. Nagano and Naomi Nagano 4

Symbols of Rebirth: The Totem Poles of New Aiyansh, British Columbia
by Ralph T. Coe 7

The Rise and Fall of the Louisiana Creationism Law Part 2: "Nonsense on Stilts"
by William J. Bennetta 16

Departments

Museum on the Move 2

Focus on the West 15

Book Reviews 25

Curators and Collections 27

Recent Acquisition 29

Footloose and Fancy Free

Tracking the Migratory Monarch Butterfly

by CHRISTOPHER D. NAGANO
and NAOMI NAGANO

Photographs by John De Leon

Peter Jump, an amateur lepidopterist, was collecting butterflies on a warm April day in the Chiricahua Mountains in southeastern Arizona. Spotting a female Monarch laying eggs on a milkweed plant, he quickly moved in and netted her. He was surprised to find a paper tag attached to the right forewing bearing instructions to mail the butterfly to the Natural History Museum of Los Angeles County. The number on the tag would later reveal that Jump's specimen was one of some two hundred Monarchs that had been tagged six months earlier at a wintering colony in Santa Barbara County on the California coast. The insect had flown a staggering straight-line distance of 660 miles—bettering the former record set in 1957. In that instance, a Monarch tagged in the San Francisco Bay Area had flown 575 miles to the Grand Canyon.

The study of the Monarchs' migration routes began some fifty years ago when Canadian entomologist Fred Urquhart began to suspect that Monarchs migrate south each fall to avoid the harsh winters of inland North America. Using bird banding studies as the model for understanding the movement patterns of the butterflies, he began seeking ways of marking and tracking individuals. Printing numbers with a marking pen or a rubber stamp pad and later with spray paint met with little success. Urquhart eventually developed finger-nail-size self-adhesive paper tags bearing consecutive numbers and his mailing address. The recoveries of marked butterflies quickly indicated that in the autumn insects migrate away from the inland regions of North America toward the southern portions of the continent. Urquhart and his associates tagged thousands of Monarchs before discovering that one of the destinations of the 100 million Monarchs from eastern North American lay high in the mountains northwest of Mexico City. Later studies by other entomologists found indications that the wintering colonies extend as far west as the states of Colima and Jalisco in central Mexico. Sites have also been reported from the mountains of Guatemala.

Monarchs have been mailed to the museum in every possible container. Most were placed in an envelope, often wrapped in tissue paper or plastic wrap. Some were packed in sturdy jewelry boxes while others were sent in oversized cardboard boxes securely padded with Styrofoam.

The Continental Divide separates the Monarchs of North America into two populations with distinct migratory routes and wintering areas. Each autumn 100 million butterflies born east of the Rocky Mountains travel from as far north as southern Canada and New England to the mountains of central Mexico. The western population, ranging from one to five million insects, migrates through the Great Basin, the Pacific Northwest, the Southwest, and portions of western Canada to an archipelago of colonies stretching along the California coast. These are the only sites that possess the conditions required by the butterflies to survive the winter successfully. The following spring the Monarchs begin a return flight to the interior of North America, only to die soon after laying their eggs. Later that year their great-great-grandchildren repeat the journey of their ancestors to spend the winter in a foreign locality that they have never visited before.

The majority of the long-distance recoveries from the Cali-

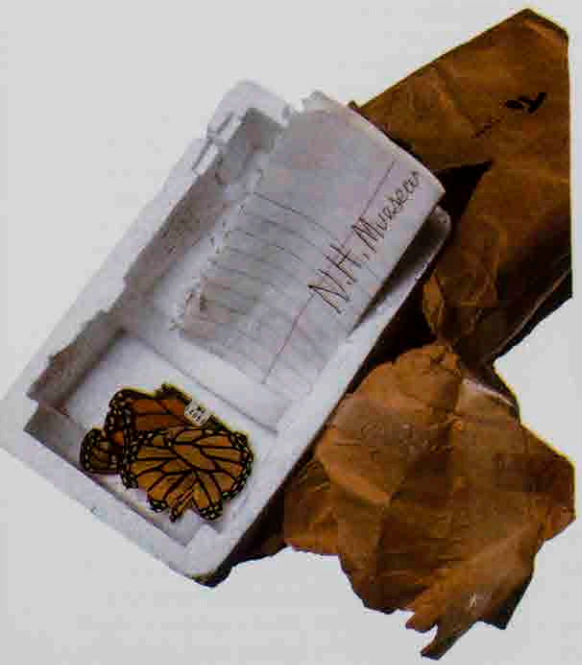
fornia wintering colonies were found in the Central Valley and along the western slope of the Sierra Nevada Mountains. Lincoln Brower and his colleagues at the University of Florida have found that Monarchs at the Mexican roosts recolonize eastern North America in several successive generations. The butterflies fly to the Gulf of Mexico region to lay their eggs on milkweed before dying. It takes a number of generations, each gradually moving further north, to repopulate the continent. The reason is simple: milkweed, which is the only plant the caterpillars can eat, does not grow until later in the spring and summer in the northern regions. With the coming of fall, all the butterflies migrate to the wintering colonies. We believe that a similar strategy is employed in western North America, although the numerous mountain ranges, valleys, and deserts make the spring recolonization far more complex.

Three years ago the Natural History Museum of Los Angeles County and the Life Science Department at Santa Monica College began an intensive study of the Monarchs of western North America. We undertook a survey to locate all the wintering colonies in California and record the ecological requirements of the butterflies. Urquhart's tagging method was used to map the spring and fall migration routes, measure population sizes, sex ratios, and the amount of movement between the roost sites.

We have tagged approximately 59,000 Monarchs to date, aided by 150 collaborators, ranging from professional entomologists and park rangers to amateur naturalists and high school biology students. The majority of the butterflies were banded at the California wintering colonies, although others have been tagged in Hawaii, Bermuda, and throughout eastern North America.

Most of the 500 tagged Monarchs that have been recovered were found where they were banded at the wintering colonies. Some were observed during their migration away from the roosts, a few others were collected in the radiator grills of cars. All the Monarchs were dead before they were mailed; when the butterflies were observed alive the numbers on the tags were reported or occasionally photos were sent to us. Only a small percentage were recovered at long distances from roosts. The butterflies were discovered by hikers, golfers, gardeners, senior citizens, school children, and surprisingly, a large number were caught by domestic cats.

Monarchs have been mailed to the museum in every possible container. Most were placed in an envelope, often wrapped in tissue paper or plastic wrap. Some were packed in sturdy jewelry boxes while others were sent in oversized cardboard boxes securely padded with Styrofoam.

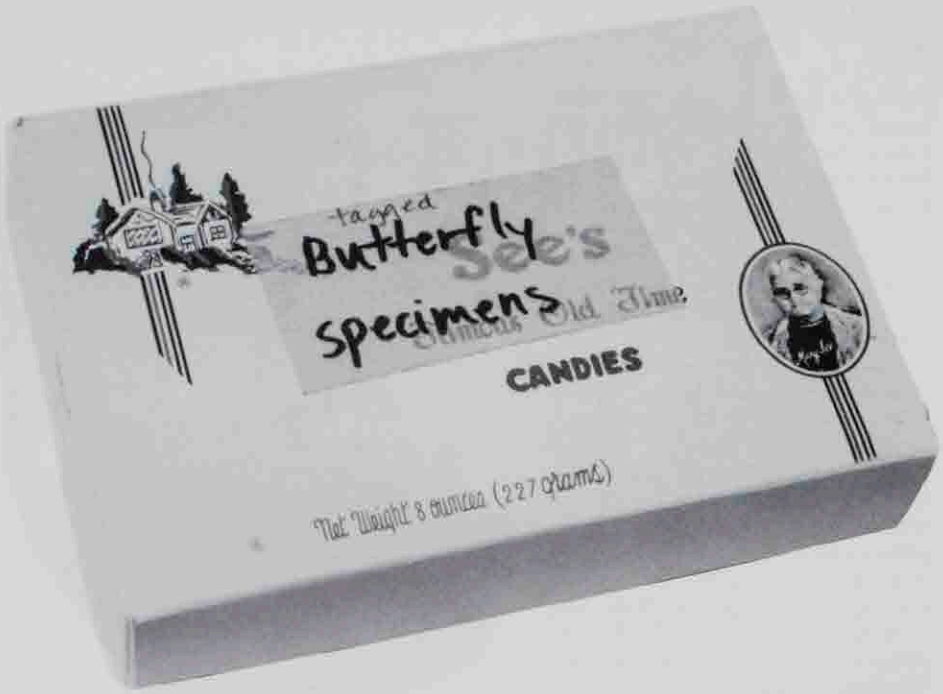


Nearly all the people who returned tagged Monarchs included information about when and where the creatures were found. Often interesting notes accompanied the butterflies: "The cat probably got it—sorry!" "It was a cold and rainy day and the butterfly was on a eucalyptus stump unable to fly because it was wet." Others speculated about the effect of urban development or pesticides on Monarchs. One woman wrote a special song about the butterflies while another included one of her poems comparing the majestic flight of Monarchs and eagles.

Each person who sent a Monarch was mailed a letter informing them where and when the butterfly was tagged along with a brief description of the reasons for the study. A copy of *Danaus*, a newsletter about the study, was also sent to respondents. The number of recoveries increased after a "wanted" poster was printed and mailed to park rangers and wildlife managers throughout western North America.

One Monarch was recovered not far from where it was tagged by a resident of a rest home. Soon after our answer the manager wrote us that the discovery had given the elderly gentleman who found it a renewed interest in life and that he was eagerly searching for other banded butterflies. Another live Monarch was found by patients at the Veterans Hospital in West Los Angeles. They were excited to learn that the butterfly had been tagged in the Santa Monica Mountains and had probably continued on its spring migration inland after they had released it.

Stories about the wintering colonies and our studies have appeared in the *Los Angeles Times*, *Life*, *Omni*, several regional newspapers, and also on the CBS Eve-



ning News. One Monarch that was tagged in Morro Bay and recovered in Bakersfield appeared nationwide on the NBC television news.

This substantial publicity led to the introduction of a bill by state assemblyman Byron Sher (D-Palo Alto) that officially recognizes the wintering colonies in California (see TERRA, July/August 1987). Signed by Governor Deukmejian in 1987, it marks the first time the positive environmental significance of any insect has been acknowledged by the state. Several agencies, including the National Park Service, the California Department of Parks and Recreation, and the Department of Fish and Game, now routinely consider the Monarchs when evaluating the impact of urban development on the coast.

Our data are increasingly being used by resource ecologists to protect and manage the California colonies that are threatened by uncontrolled tourism and urban and agricultural development. Park rangers have used this information to protect the butterflies at one of the largest wintering colonies located at Pismo State Beach on the central California coast. It became clear that railings and trails were critical to keep the estimated five thousand sightseers away from the sensitive areas of the habitat. Local naturalists and visitors from as far away as the East Coast and Europe come to enjoy the migratory spectacle while knowing their presence is not harmful to the Monarchs.

Our studies have led to a greater understanding of the migratory behavior and ecology of the Monarchs of western North America. But perhaps equally as important, the public's interest in the tagging program has led to an increased awareness of the crucial need for environmental protection and wildlife conservation.

Christopher D. Nagano is a Research Associate in the museum's Entomology Section. He is studying the migratory behavior of Monarchs as well as working to protect the wintering colonies with federal and state authorities. Naomi Nagano is a natural history writer living in the foothills of the Sierra Nevadas. This is her first article for TERRA. *If you are interested in learning more about Monarch butterflies, write to Christopher Nagano, Natural History Museum, 900 Exposition Boulevard, Los Angeles, CA 90007.*

Tracking the Monarch Butterfly

Thursday evening, November 3 and
Saturday November 5
OR Wednesday evening, November 9 and
Saturday, November 12
OR Wednesday evening, November 16 and
Sunday, November 20
Evenings, 7 to 9 p.m.
Weekend Days, 10 a.m. to 2 p.m.
Each trip limited to 25 participants;
transportation is not provided.
$12 members, $15 nonmembers.
Please call 213/744-3342
for more information.

SYMBOLS OF REBIRTH

The Totem Poles of New Aiyansh, British Columbia

by RALPH T. COE

THE UNITY POLE

To the Nishga, a separate group among the Tsimshian division of Canadian Northwest Coast Native Americans, it is the raising of a totem pole and the ceremonies associated with it that make the dead cedar come alive. Until a pole is potlatched (to use a general term; the Tsimshian group refer to a totem pole dedication as a feast, the giving of a feast) it is not finished. It is one thing to carve a pole, another to give it power before the invited guests. One of the most important and remembered events in twentieth-century Nishga history will always be the raising of the Unity Pole in the village of New Aiyansh.

As the first pole raised by the Nass River (see map) in a century, the Unity Pole signaled both a new beginning and a redemption of an almost-lost past. "We've never done anything like this before," James Gosnell, president of the Nishga Tribal Council, told a reporter, "no one ever saw a pole go up. We have only our elders' memories."

The Unity Pole was raised on Tuesday, November 1, 1977, at the beginning of a two-day ceremony, the second day being given over to the opening of a new elementary/secondary school. As part of the events nearly 500 delegates from the whole Nass Valley assembled for two days more to plan land-claim strategy with the Nishga Tribal Council. The result was a polite but firm demand to the Canadian Indian Affairs Minister and Labor Minister to return to the Nass Valley on January 12, 1978, the second anniversary of the government's promise to begin negotiations on land claims in earnest. The promise and the commencement of negotiations bracket the raising of the pole. How inextricably it is linked to the Nishga manifesto of unity was explained by Frank Calder, the first Nishga member of British Columbia's Legislative Assembly: "We've never faltered, no not in one hundred years. We continue to struggle for our rights. This pole is a manifesto of Nishga unity, a declaration that this land is our land."

The pole raising and school dedication were a media event, what some anthropologists have called a "media potlatch." They were covered widely on Canadian television, and a Japanese television sent a crew to film for home consumption. No other pole raising has had such impact. Larry Hoback, an Anglo resident of New Aiyansh instrumental in supporting the pole's creation, remembers: "There were more Nishga and visitors than I had ever seen before. The town was burstng to the seams. There hadn't been such a gathering in years, if ever."

> ***One of the most important and remembered events in twentieth-century Nishga history will always be the raising of the Unity Pole in New Aiyansh.***

The raising program occupied all the first day: around 9 a.m. the pole was moved from the carving shed beside the Gosnell home on Madeek Drive. Fifty strong cedar carrying sticks were slung under the pole, each manned by a pair of marchers, fifty to each side, bearing the three-ton mass like a catafalque. A reporter wrote:

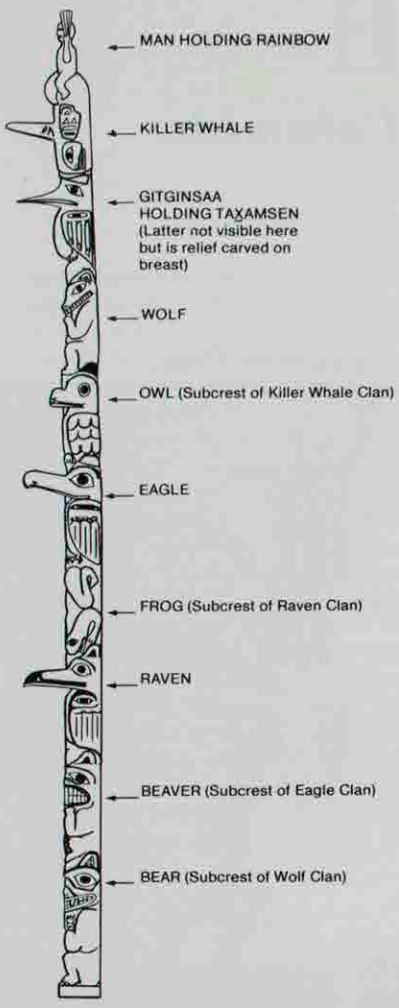
> "Tears flowed freely as the huge pole inched its way through the heavy snowstorm that marked the opening day. The elders and leaders, clothed in new black and red blankets and traditional headdresses, shouted at each pause. As the pole reached the school and slowly began to sway into the cold mountain air (about 1 p.m.), the tension was almost unbearable....The ropes creaked; then, as was the custom, when the pole was a few inches from its final resting place, the elders circled it for the final ceremonial push. Titus Nisyok, the oldest Nishga, chanted a dirge that raised the hair on many spectators."

There were speeches, among them one by carver Eli Gosnell, James Gosnell's father, explaining the meaning of the pole, as was also custom. At 6 p.m. the feast for the pole was held in the Community Hall, and afterward there was dancing by the New Aiyansh tribal dancers, who had been practicing for the event under their director Eli Gosnell. Thus was the Unity Pole potlatched, witnessed by thousands of guests both in New Aiyansh and all over the world.

The Northwest Coast

THE FOUNDING OF NEW AIYANSH

Until the turn of this century Native American villages in the northern part of the Canadian Pacific Coast were easily identifiable by a row of great cedar totem poles pushing up from the cleared forest edge like fingers. These sculptures were the prime vehicles of Northwest Coast crest display. These crests, in the form of various real and supernatural animals, symbolized clan affiliation, family lineage, legends, and property rights. By the poles' height and by the splendor of their carved imagery, Northwest Coast tribes proclaimed the grandeur of belonging to clans and great families. Behind the poles, some of which served as mor-


MAN HOLDING RAINBOW
KILLER WHALE
GITGINSAA HOLDING TAX̲AMSEN (Latter not visible here but is relief carved on breast)
WOLF
OWL (Subcrest of Killer Whale Clan)
EAGLE
FROG (Subcrest of Raven Clan)
RAVEN
BEAVER (Subcrest of Eagle Clan)
BEAR (Subcrest of Wolf Clan)

This drawing of the Unity Pole outlines the pole's ten symbolic figures. See text page 11 for an explanation of their meaning. Drawing by Mary Butler from Nishga secondary school materials.

In the 1970s the circle had come full turn and the local Anglican church shows its "takeover" by Nishga ways exemplified by this white wolf button blanket created by the ladies auxiliary of the New Aiyansh Anglican Church. Photograph by the Reverend Thomas Wiederholt.

tuary monuments, stood gable-roofed plank-sided houses, the dwellings of the chiefs and their extended families.

Gitlax̲t'aamiks, a settlement of the Nishga tribe on the Nass River, was just such a village. The Nishga had a number of settlements in the Nass River Valley, which stretches northwestward behind the southern tip of the Alaska panhandle. Gitlax̲t'aamiks was once one of the most important of these villages.

Shortly after 1900 the residents of Gitlax̲t'aamiks started to abandon their village for a new locale slightly upriver. It was a gradual withdrawal, for some of the old people refused to leave. But most left because of the dangers of river floods and because of missionary pressures. The first missionary in the area, Anglican J. B. McCullage, wanted the Nishga to ignore their totem poles and all they stood for, disassociate themselves from "heathenish" practices, and embrace Christian teachings completely. This would be easier to accomplish in a new location.

The church did help the Nishga develop their own written language, but at the time of the exodus from Gitlax̲t'aamiks, a native script was viewed only as a way of translating hymns and the eucharist and to vanquish the age-old native tradition of myths and legends, which constituted the Nishga basis of understanding of their origins, morality, social organization, and spiritual belief. This the church seemed determined to erase.

The successor village of Aiyansh was located about a mile and a half upriver, nearly in view of the Gitlax̲t'aamiks poles. There traditional knowledge of the old ways began a slow decline. European frame houses replaced the traditional plank dwellings, forcing the extended families who had lived communally in them to live in separate dwellings. A church spire became the most conspicuous feature of the village. Over the years many of the old poles of the Nass Valley were removed to be placed in museums. Others decayed and joined the forest. By the 1940s no poles were left in the Nass Valley.

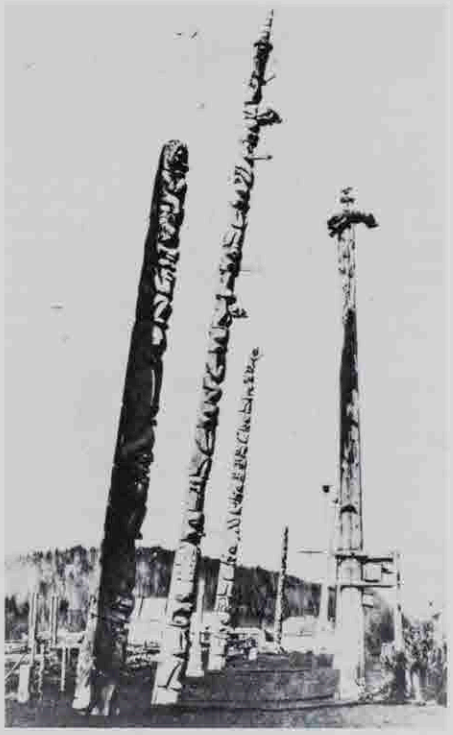
Still, the myths were remembered and told. The culture slept but did not die. Even though the chiefs no longer held authority over the village, the heads of the clan houses still had great symbolic importance among the people. Old regalia was saved and used, though ceremonies were shortened or altered to fit outside pressures. In 1951 the Canadian government quietly rescinded the anti-ceremonial provision of the Canadian Indian Act. It almost seemed, however, like unlocking the barn door after the horse had left.

As the decades wore on the buildings of Aiyansh fell into disrepair. The native living standard declined. A couple of serious fires broke out, one of which destroyed a quantity of precious ceremonial and dancing regalia. And the problem of flooding reappeared.

Further reinstitution of traditional Nishga ways can be seen on the painted front of the New Aiyansh Community Hall. It depicts the monster Jubiliix̲w bird and side panels showing other Nishga symbols. It was designed by elder Eli Gosnell. Photograph by Ralph T. Coe.

Then the Canadian Cellulose Corporation built a lumber road through the forest from Terrace, British Columbia, sixty miles north to newly founded Nass Camp, the dormitory/staging area for a developing lumber boom in the Nass Valley. Aiyansh was bypassed by this road. Left in further isolation, so near yet so far from prosperity, its people wondered how to join the influx of commerce into their district and use the job opportunities the lumber operation offered. The obvious solution was to move their village again.

The museum will be leading a trip to Canada's Northwest Coast July 21 to 27, 1989. Visit the Queen Charlotte Islands, which are home to the culturally rich Haida Indians. We will tour abandoned villages that contain the ruins of the great long houses and some of the best remaining examples of original native totem poles to be found in the world. Please call 213/744-3535 for more information.



A 1901 photograph of the Nishga winter village of Gitlaxt'aamiks on the Nass River, northwestern British Columbia. Missionaries urged the Nishga to abandon Gitlaxt'aamiks and move to the new village of Aiyansh to escape what they saw as the baneful influence of heathen Indian ways. From Nishga secondary school materials.

In the late 1960s the Aiyansh Nishga received permission from the Department of Indian and Northern Affairs to build a new town across the river and on the access road that was opening up the primeval forest to the modern era. New Aiyansh was to be a town of modern conveniences. It was to serve the other Nishga communities downriver. It was to have a school, health facilities, and up-to-date housing. Many of its residents did become employees of the lumber camp—lumberjacks or foremen.

Some old people remained behind at Old Aiyansh to spend summers there or smoke rows of salmon from the rafters of now-derelict houses. The reluctance to depart echoed the slow removal from Gitlaxt'aamiks. An old Nishga remembrance song laments: "Here we are on this bank—separated from loved ones on the other."

RENEWING THE PAST

The elders in New Aiyansh began to voice their concerns about losing everything that the Nishga had traditionally cherished: their legends; their history, to which legend and myth are tied; their customs and beliefs; and their arts. Nishga leaders began to listen to the old people. Meetings and conferences were held on the future of the Nishga and attendees formed an agenda to preserve the structure of Nishga culture in the midst of a new environment. "We simply could not sustain further loss of our heritage and keep our tribal identity. We decided to organize ourselves to take our future into our own hands. No one knew better than us the nature of our crisis," band leader Ed Wright said to me in 1978. This leader continued, "We had to figure out our position both as Nishga and as Canadian citizens. Remember, we weren't given the right to vote until 1960. It's always a slow struggle for tribal recognition."

"We've never done anything like this before," the president of the Nishga Tribal Council told a reporter, "no one ever saw a pole go up. We have only our elders' memories."

Above all, the Nishga wanted to secure clear title to their traditional territory, not only around New Aiyansh, but all along the Nass where the native settlements of Kincolith, Greenville, and Canyon City are located, including the great eulachon (or candlefish, *Taleichthys pacificus)* fishing grounds of the Nass and, of course, the vast timber lands being clear-cut by outside interests with neither Nishga permission nor control.

In 1973 they went to court to begin the long process of securing title to their traditional land. They have forced both the federal and provincial governments to acknowledge the longstanding Nishga claim to their Nass Valley homeland. They have argued along powerful legal lines to the effect that pre-existing aboriginal rights cannot be canceled unilaterally, and that their own title to the valley has never been extinguished, since they have never signed treaties or sold land or even individual property to any Canadians. The cry went up: "Nishga land is not for sale." The Nishga land claim is the most important one before the Canadian courts, and it will set a major precedent for the future.

The Nishga are unique in their simultaneous approach to self-determination. A healthy mind in a sound Nishga body has been their reasoned goal from the start, and the only way to achieve that goal was for them to control tribal education and health. This they have accomplished while waiting for the land claim settlement to grind its way through the courts. From the provincial government they obtained the first school in British Columbia with a wholly native school board. Now a decade has passed and the New Aiyansh School has become a model for native education. A thoroughly modern facility, it is a source of community pride. Before it stands the most important Nishga work of art since the abandonment of the old villages, the sixty-foot Unity totem pole. It is no accident that the pole and the school stand in close proximity.

Titus Nysiok, Nishga elder and participant in the dedication of the Unity Pole. He was a chief of the eagle clan and a close friend of Eli Gosnell, master carver of the pole. Photograph courtesy Larry and Jeanne Hoback.

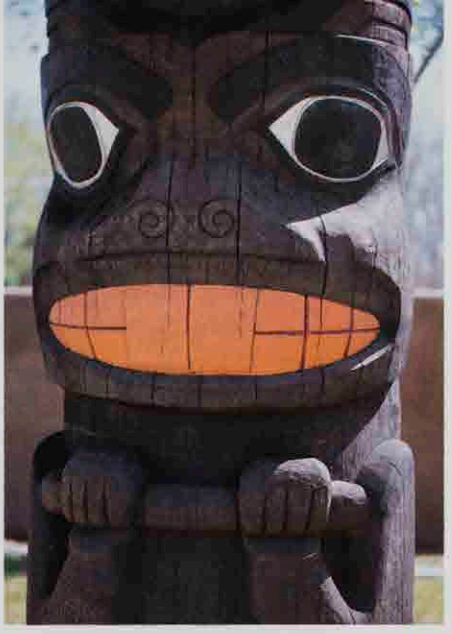
The Nishga Unity Pole stands before the New Aiyansh elementary/secondary school. As the first totem pole raised on the Nass River in a century, the Unity Pole signaled both a new beginning and a redemption of an almost-lost past. Eli Gosnell was the master carver, Joe Gosnell was the head carver, and George Gosnell and Jacob Nyce were the assistant carvers. Photograph by Ralph T. Coe.

Native educational control has resulted in the setting up of programs with a strong native orientation. The New Aiyansh Elementary/Secondary School produces coloring books on the totem pole and on other Nishga subjects. It publishes booklets on the ancient heroes and legends so that the symbolism and myths are absorbed by the coming generation in a natural yet modern way. Most important, the School District #92 (Nishga) Bi-lingual Bi-Cultural Program has printed well-bound and information-packed tribal monographs. This on-going series treats native history, customs, organization, belief, and ceremony with special brochures on such subjects as native warfare and clothing. These are written in English, but studded with Nishga terminology and geared toward native cultural understanding, not anthropological research, a sort of Nishga encyclopedia.

The Nishga language is taught as a basic requirement for graduation, and fluency is necessary. Today its use is secular, not religious, and poems are composed in Nishga as well as English. Today there is no excuse for a Nishga not to know the dynamics of his or her culture, for they have been interwoven into the present. Visiting the school, which serves the entire Nishga Valley (though it is linked to other schools in the valley), I had the impression that new ways really can blend with old things. At that time the Unity Pole had been standing beside the school for only ten months, and feelings and pride ran particularly high.

THE GENESIS OF THE UNITY POLE

The path that led to the creation of the all-Nishga Unity Pole was both artistic and political. The artistic manifestation began in the early 1970s when the ladies auxiliary of the New Aiyansh Anglican Church approached the rector about new robes for the celebrants of the service, all of them Nishga, except for the rector, Archdeacon John Blyth. This marked the beginnings of new cooperation between the church and tribe, the former supporting the latter's desire for self-determination. The rector told me that he knew the women "were up to something" but he didn't know what. The "robes" turned out to be beautifully made traditional wearing blankets, prestigious emblems of clan affiliation from the time that Hudson's Bay blankets, red felt, and buttons were introduced on the Nass, about 1850. An altar cloth was made for the church, more innovative than the robes, on which the four basic clan symbols of the Nishga are displayed together—killer whale, raven, eagle, and wolf. What was happening here was a reaffirmation of the traditional clan



Detail of a beaver at the base of the family/clan pole showing the archaic style of traditional Nishga carving. Photograph by Jack Parsons.

system: in a sense a clan takeover of the church. The circle had come full turn.

Far more overt was a reinstitution of the traditional painted housefront, none of which had survived the move from Gitlax̲t'aamiks to Old Aiyansh. A housefront mural was painted on the facade of the most public building in New Aiyansh, the Community Hall, which had an old-timey gable front. The designer of this mural was elder Eli Gosnell. It recalls a Jiibilx̲w housefront this elder may well have known in his youth. On it a Jiibilx̲w (a monster bird) seems to ascend, its three-dimensional beak projecting over anyone who enters the building, as if swallowing them up. This dramatically aggressive design is a subcrest of the eagle clan; the side panels at either end of the gable display the killer whale, raven, eagle, and wolf crests. In a way the modern Northwest Coast community hall has assumed the ceremonial function of the houses in which or before which feasts (potlatches) were held. When the Unity Pole was dedicated, the accompanying feast was held in this building.

The community hall front set the stage for a far more public manifestation of the Nishga's growing nationalism: the Unity Pole. In the decade that has passed since its raising, its political genesis is a little murky. The decision to have it carved received a lot of input from various tribal leaders. It would seem that the motivation for creating it and raising it (the latter is equally important in the Indian view) was political. But here it should be emphasized that the all-inclusivity of the native definition of culture includes such matters as politics, in the end an individual part of the whole, what is meant by tribe or nation. Larry Hoback, both an observer and par-

ticipant in the events at New Aiyansh, has this to say about the origins of the Unity Pole: "If a people are negotiating for school grants, for independent governance, and for a viable future, what could be more appropriate for the Northwest Coast, and more effective, than the raising of a totem pole to show that everything is united, acting together?" The Nishga put aside the fragmentation and factionalism that usually rends Indian politics in order to erect a salient example of the most widely recognized symbol of Northwest Coast culture. It was bound to attract attention.

While not the highest Nishga pole (several higher were erected in the nineteenth century), the Unity Pole is higher than many. It is twenty-five feet higher than the second pole carved by the same team, which displays family crests. It is an innovation for a whole tribe to own a pole, though a move in that direction was made as early as 1969 when the renowned contemporary Haida artist Robert Davidson raised a pole for the entire Masset Haida band and by implication for the Haida in general. Bill Reid, the most famous contemporary Northwest Coast artist, followed suit by raising his pole in honor of his mother's band against the Skidegate band council building. This pole is slightly higher than the Nishga Unity Pole and depicts world symbols as well as crests identified with both Haida phratries (tribal subgroups). By contrast, the Unity Pole is restricted to the Nishga themselves. And it wasn't the gift of an individual to tribe or band, but was carved to the order of the Nishga band council. As Larry Hoback thinks he remembers it, James Gosnell, president of the council, called his father Eli in and said, in effect, "This is what we intend to do, and we would like you to do it." This simply would not have happened in olden times, but then times had changed, and the Nishga had already shown their resolve in adjusting to new conditions.

The path that led to the creation of the all-Nishga Unity Pole was both artistic and political.

The Unity Pole has ten symbolic figures (see illustration page 9). These are, in descending order: man holding rainbow, killer whale, Gitginsaa holding Taxamsen, wolf, owl (subcrest of killer whale clan), eagle, frog (subcrest of raven), raven, beaver (subcrest of the eagle), and, on the bottom, bear (subcrest of wolf).

The rainbow held aloft in the sky like an arched banner is one of the most striking symbols in contemporary Northwest Coast sculpture. It draws its inspiration perhaps from an old Nishga pole illustrated in one of the School District #92 monographs several years after Eli Gosnell's death. The story goes that during the great flood the Nishga took refuge on a sacred mountain until, when the waters started to recede, a rainbow appeared (some versions attest to thousands of rainbows in the sky). To the Nishga the rainbow is a symbol not only of hope, but survival; it has also now become a symbol of the future—at the highest skyward reach are gathered the hopes and aspirations of the Nishga.

Because the rainbow story is the possession of the killer whale clan, the man holding the rainbow stands on this mammal. Below it is Gitginsaa, the mythical fleetest of all birds. He holds Taxamsen, a special messenger of K'amligihahlhaahl, the supreme deity who is omnipresent but invisible, at once the place beyond and the place most hallowed. Sometimes Taxamsen is shown as a raven, but is here in his human aspect (not visible in the line drawing). By dressing himself in the feathers of Gitginsaa he flies upward to obtain light and water. He is the trickster who shaped and molded the earth to human need. According to the Unity Pole dedication program he holds light and water in his hands and a pouch that contains a rock from the headwaters of the Nass.

As long as the Unity Pole continues to dominate the skyline of New Aiyansh, its message will be fresh. In the Indian view tradition is handed up, not down—just as poles must be raised. Past and present merge. Already this event is part of Nishga literature, re-created over and again. Witness this poem about the meaning of the pole, printed on the occasion of the 1986 Unity Day celebration, nine years after the raising and eight years after its master carver's passing. Modern as it is, it is reminiscent of old Tsimshian texts and songs that proclaimed greatness:

The Unity Pole
As the pole rose higher
It seemed to call upon us, As
the people of the Nass!
It spoke to our hearts and minds,
saying: "Don't give up now my
children
the battle is getting tough
and will give up in the end."
We can't and won't let no white man
Come along and take away our
Natural beauty....
Some white men think we wouldn't be
able
To survive without them.
We will.
The Unity Pole is one step ahead
to prove it.
—Erica Martin
(translated from the Nishga)

The Hoback family/clan pole was carved with the Unity Pole by the same carvers. Its style, however, is more conservative, more inward looking. Because the pole has not yet been potlatched (presented to the Nishga with a ceremonial feast), the legends associated with the figures have not been explained. Photographed at the Albuquerque Museum of History and Art by Jack Parsons.

Master carver Eli Gosnell with the family/clan totem pole in the long house shed where it was carved. Photograph courtesy Larry and Jeanne Hoback.

THE CARVING OF THE FAMILY/CLAN POLE

Is the Unity Pole a modern political statement or ages old reenactment? It is both of these things and in what it triggers emotionally much more. But what about the poles that belonged to only one tribe or family and use only their own crests? Traditionally these were the poles that expressed Nishga nuclear social organization and that made up the forests of poles so striking in early photographs of old Northwest Coast villages. Without the basic family/clan relationship Nishga social organization would rip apart if not topple by its roots—as had happened elsewhere in other parts of the Northwest Coast, where there remained only a partial idea of old lineage and clan relationships.

Eli Gosnell was concerned with the preservation of basic family/clan structure as he served as master carver of the Unity Pole. In carving a clan pole he could act on his own, rather than under tribal council supervision. To symbolize this ancient aspect of Nishga society he resolved to carve a second pole at the same time as the Unity Pole. It was finished at the same time, carved by the same team, and at the same carving shed by the Gosnell house.

The hoopla surrounding the raising of the larger pole has obscured the importance of the smaller one. The family/clan pole is thirty-five feet high, twenty-five feet shorter than its better-known companion. If the Unity Pole looks outward, the family/clan pole looks inward to the foundation of Nishga social organization, without which there would be no survival of the tribal ethos. Another reason for its obscurity is that to date it has never been raised. It has always been "that other pole." When I visited New Aiyansh in 1978 and again in 1983, I had to drive out of town into the woods to see it and could only speculate at what it would look like upright. Not until 1988 was the family/clan pole placed upright, and far from Nishga territory at that.

Since it has not been potlatched, the story or myth that connects its animal images cannot yet be told. In contrast to the ten symbols on the Unity Pole, the family/clan pole has six. From top to bottom these are: an eagle perched on top of a killer whale, a creature holding a salmon with a knife stabbing the fish, a sharp-jawed wolf, another creature with faces carved in each raised paw, and a beaver with large front incisors holding a stick in his paws, and with a scaly tail in the center of which another face is carved.

The eagle perches proudly and serves as a finial. For present purposes it and the wolf part way down the pole are the sole axis of interpretation. As Nishga descent is reckoned in the mother's line, the eagle dominates and symbolizes the clan of the wife; the wolf, placed in an inferior position, symbolizes the father's clan. Their children are eagles.

The family/clan pole is a less sophisticated and more vernacular carving than the Unity Pole. Adze marks lend a rougher finish to surfaces and expressions of the animals are archaic. Teeth are red, mouths are almost straight, curves are latent. There is a fundamentalist inward turning here that contrasts with the extroverted stance and more subtle curves that link the compositional units of the taller Unity Pole. By no means are they near-identical productions, one merely a scaled-down version of the other. But then, each serves a different purpose within present-day Nishga culture.

A FRIENDSHIP THAT CROSSED TWO WORLDS

Not only does the family/clan pole present a nonpublic facet of the culture, it celebrates a personal friendship that crossed both Anglo and native worlds. As a child in Hastings, Nebraska, young Larry Hoback, who never dreamed he would live in the north woods, wrote the renowned Oglala Sioux Chief, Red Cloud. "That was the beginning of my interest in Indians," he told me. On a trip through British Columbia in the 1960s Larry and his wife Jeanne had been enthralled by Tsimshian country and settled for a time at Terrace, B.C. They soon drove up the lumber road to the Nass Valley and found they liked that country and the inhabitants even better. They resettled and were well-known as owners of the Nass Service Center from 1971 until it burned in 1979; in 1980 Larry was appointed secretary/treasurer to the Nishga District #92 School Board. Said Larry: "Everyone in the Nass Valley went through that store; I got to know everybody." Among the visitors to the store was Eli Gosnell.

Larry had taken his personal library on American Indians with him, and his interest in the subject impressed Gosnell. Larry says of this friendship: "I liked him and he liked me. We talked a lot, often about legends of the Nishga. He believed in the ark that was left after the great flood when the rainbow appeared. Once

Eli Gosnell dressed in traditional Nishga dress: a button blanket and a wolf head mask lined with ermine. He has a cedar bark rope arund his neck and is holding the "talking stick." Gosnell's Indian name, Wiigadim Xsgaak, means Great Eagle Man of the Wolf Clan. He died in 1978, not long after the Unity Pole was raised in New Aiyansh. Photograph courtesy Larry and Jeanne Hoback.

his father had seen its remains way up Mount Vedder (a sacred mountain of the Nishga), and he always wanted to climb someday and find them."

About 1973 Eli Gosnell suggested that he and his wife adopt the Hobacks. This was a serious step—friendship turned into a formalized Nishga relationship. Eli adopted Larry as his brother. Mary Gosnell adopted Jeanne Hoback as her sister. They became clan members, Jeanne becoming an eagle (Mrs. Gosnell's clan) and Larry a wolf (Eli Gosnell's clan, of which he was a hereditary chief). They were given Nishga names, Gisgats (Smiling Benevolent Person) for Larry and K'iplax (Tiny Bright Trout) for Jeanne.

After the adoption there were gentle hints about totem poles from Eli. Then there were words to the effect that it would be nice to have a totem pole around and then a direct query about a totem pole specifically for the Hobacks so that they could complete their crest affiliations in a time-honored manner. Not only were the Hobacks clan members, but they were economically better qualified than most Nishga to bear the costs of having the pole carved (traditionally necessary) and the much heavier cost of having it potlatched. As Larry wrote me recently, "he carved the pole not to make money, but as a favor and a symbol of our friendship, our family history, and our ties to the land."

Eli Gosnell, whose Indian name is Wiigadim Xsgaak or Great Eagle Man of the Wolf Clan, came from a patrician Gitlaxt'aamiks family and was born around 1900. Earlier hereditary traditional carvers are credited with training him in the carving arts. Though never a member of the school board, there is a memorial to him in the elementary/secondary school for his great contributions to Nishga culture. As a noted tribal speaker he was one of the most eloquent champions of modern education for his tribe, "never to imitate the white man, but as a way of furthering the culture. In every way he was a Nishga statesman," remembers Larry Hoback. "He could speak to every level of the community and to any Canadian politician. And he had the chiefly stature that gave import to what he said. He knew how to speak in a simple but very profound way. 'Indians don't speak on and on like the white man does,' he used to say, 'you think ahead and then your heart comes up at once with the solution.'"

He never considered himself an artist, for in his traditional culture there really was no such thing as an artist. Rather, Eli Gosnell is remembered as a great tribal advocate, chief to his clan, master carver, and dance leader—a knowledgeable advisor on all things cultural. This creator of two great Nishga totem poles, who single-handedly master-minded their revival, was never listed on the official roster of Canadian native artists. He undertook to carve the Unity Pole and the family/clan pole only at the end of his life. By the time the Unity Pole was dedicated his health was already fragile. Next spring he died partly from the strain of leading a four-day traditional funeral for his dear friend Titus Nysiok—the oldest of the Nishgas.

Eli Gosnell did not carve the family/clan pole for himself; he carved it for his wife's and Jeanne Hoback's *opposite* clan, the eagles. He obeyed the laws of matrilineal inheritance, placing the eagle at the top, and his own crest, the wolf, well down the pole.

The Hobacks will be responsible for the feast that will dedicate their pole. Preparation for the event will take months, planning considerably longer. All the invited guests who witness the crest claims will have to be given gifts, some lavish ones, according to their status and how much they helped with the preparations. There will be the expenses of food, transportation of visitors, of housing the feast, and orchestrating the event from speeches to actual raising—all the costs, say, of giving an elaborate debutante debut in the white world. The potlatch, however, will be a spiritually solemn as well as joyous occasion. Joe Gosnell, head carver under Eli for both poles, and inheritor of his father's artistic mantle, will probably relate the legend associated with the pole, which his father in all probability told him before he died.

Without the family/clan relationship Nishga social organization would rip apart if not topple by its roots. To symbolize this relationship Eli Gosnell resolved to carve a second pole with the Unity Pole.

In the meantime the Hoback family/clan pole has been generously loaned to the **Lost and Found Traditions** exhibition, where it provides a psychological centering for several hundred works of a contemporary/traditional nature from most parts of native North America. Care has been taken during the tour that no activities of a sacred nature will take place near it in order to preserve its ceremonial purity for the day when it is properly potlatched. To secure its loan a contribution was made by the exhibitions organizing agency, the American Federation of Arts, toward that future great occasion. As yet no Nishga have seen the pole upright as it has been photographed for this essay. The family/clan pole and the Unity Pole are living evidence of a great native people who have struggled not to let their culture die. Gitlaxt'aamiks is long gone, but there is a path back to it all the same.

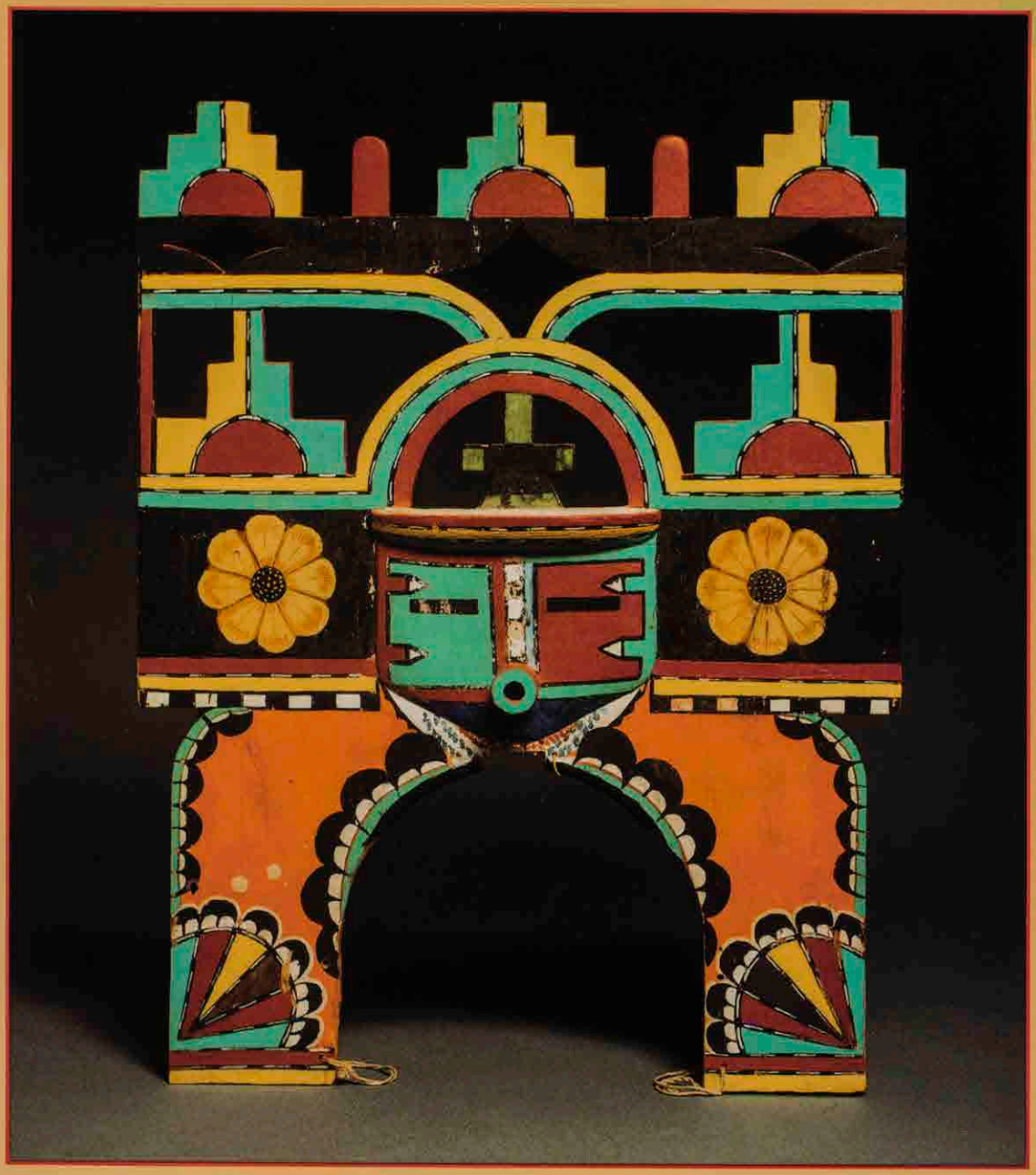
Author's Note: I am indebted to E. Bertram Berkeley who arranged my first visit to the Nass Valley in 1978 and to Larry and Jeanne Hoback not only for the generous loan of their totem pole to the ***Lost and Found Traditions*** *exhibition, but for sharing much information that appears here. Joe and Mary Gosnell, Ed Wright, and Rod Robinson were very courteous to me at New Aiyansh, and I am grateful to them. Genaro Apodaca and Guy Herrington were helpful in bringing back to me recent information on the Nass Valley.*

Ralph T. Coe is a renowned scholar of Native American art and curator of the much-acclaimed bicentennial exhibition ***Sacred Circles: Two Thousand Years of Native American Art.***

As this article goes to press, we sadly record the death of James Gosnell, who was not only mourned by his people, but recognized as "a remarkable man on the provincial scene [accorded] both the rites due a devout Anglican and those of Nishga tradition." (Vancouver Sun, *August 6, 1988).*

Mary Gosnell, Eli's wife, in her traditional Indian dress, which represents her clan, the eagles. The family/clan pole was carved for this group. Photograph courtesy Larry and Jeanne Hoback.

Lost and Found Traditions: Native American Art 1965–1985



(October 8 through December 11) is an exhibition of contemporary Native American art that demonstrates the vitality of the artistic tradition in nearly every major Native American cultural group. Curated by Ralph T. Coe, the author of this article, the collection of 383 objects ranges from a Cherokee basket made of river cane to a pair of beaded Sioux sneakers. This splendid diversity grows out of the continued creative interpretations of traditional techniques and materials; new ideas and new ways of adapting old ideas exist side by side with continuations and revivals of archetypal work. The exhibition is organized by the American Federation of Arts and is made possible by generous grants from the Primerica Foundation with additional support from the Sacred Circle Fund and the National Endowment for the Arts.

This Sio Hemis tablita (Zuni Jemez kachina) was created by an unknown Hopi artist between 1970 and 1975. Women wear tablitas on their heads in dances such as Powamu; the elaborate designs, capable of endless rearrangement, are not carved for sale, but are created for girls by their boyfriends or uncles. Photograph by Bobby Hansson.

FOCUS ON THE WEST

This photograph of a child and his unusual playmates was probably taken in the 1920s or 1930s at the California Alligator Farm in Lincoln Park. Once a major tourist attraction, the farm was home to more than 1,000 reptiles. A promotional brochure proclaimed it the "World's Largest Alligator Farm." The alligators entertained visitors by sliding down chutes and providing rides for children. Margaret Mackey's 1940 guide, Going Places in and Near Los Angeles, ***noted that the star of the park was a "quiet, friendly" creature named Billy who had appeared in several movies. Billy's motion picture career may have ended abruptly for, in addition to rides and entertainment, the farm also advertised a "complete line of alligator handbags, purses, belts, etc."***

Focus on the West: Images from the Seaver Center is a new TERRA feature that presents the photographic highlights of the museum's Seaver Center for Western History Research. The Seaver Center is rich in photographs and other materials relating to the history of the American West.

THE RISE AND FALL OF THE LOUISIANA CREATIONISM LAW
Part 2: "Nonsense on Stilts"

by WILLIAM J. BENNETTA

Summary of Part 1. *Creationism is a political arm of fundamentalism. The creationists seek to impose onto the population at large, by political means, a body of religious beliefs derived from literal readings of the King James version of the Holy Bible. The name* creationists *reflects their special emphasis on the creation narratives in the Book of Genesis, their insistence that these be presented in public schools as accurate reports of historical events, and their correlative insistence that any contrary findings of science be suppressed.*

During the early 1970s, the creationists adopted a political strategy that emphasized "creation-science." This is a religious pseudoscience that purports to furnish technical validation for prominent episodes in the Bible and hence for various fundamentalist doctrines. It also purports to refute evolutionary views of the universe, of Earth, and of living things.

In Part 1 of this article, published in our July/August issue, William J. Bennetta described "creation-science" and told how creationists in Louisiana secured, in July 1981, the enactment of a statute saying that evolutionary science and "creation-science" were to receive "balanced treatment" in that state's public schools. If a school's teachers or books offered information about evolution, they would have to make a countervailing presentation of "the scientific evidences for creation."

The statute was founded on a bold trick. The creationists in the Louisiana legislature foresaw that any description of "creation-science" would identify it as a restatement of biblical religion, so they provided no definition of "creation-science" or of "creation." The statute assiduously promoted the teaching of "creation-science," and it even required Louisiana's governor to choose seven "creation-scientists" who would help in the development of a curriculum, but it refused to say what "creation-science" was.

A suit challenging the statute was filed, later in 1981, in the federal district court at Baton Rouge. The plaintiffs, who included educators, religious leaders, and parents of public-school students, told that "creation-science" was simply fundamentalist religion in disguise. They asserted that the Louisiana law violated the establishment clause of the First Amendment to the federal Constitution, which forbids any law that would establish an official religion.

Early in 1982, an Arkansas "balanced treatment" law—very similar to Louisiana's and derived from the same model—was ruled unconstitutional by a federal district court in Little Rock.

The defense of the Louisiana statute was led by Wendell Bird, a fundamentalist lawyer from Georgia who now functioned as a special assistant attorney general of Louisiana. Bird and his allies adopted the same strategy that the legislature had used. They refused to say what "creation-science" was, who practiced it, or how anyone could learn about it. They made vague statements suggesting that it somehow involved "abrupt appearance" of natural entities, but they gave most of their energy to saying what it did not *involve. It did* not *involve religion or supernatural acts or the Bible, they said.*

Their assertions were rubbish and their case was a sham, just as the Louisiana statute itself was an exercise in deception.

To bolster their evasions and their misleading claims, the defense team produced five evasive, misleading affidavits. These were remarkable because the affiants wrote about "creation-science" and said that it was not religious, but no affiant told how he had learned about it. None claimed to be a "creation-scientist," to have met a "creation-scientist," or to have seen a "creation-science" publication. The most revelatory affidavit came from Dean H. Kenyon, a fundamentalist who teaches at San Francisco State University and has been a prominent attraction in the creationists' show for some years. His text was long, disingenuous, and nonsensical, but it also contained a gem: Kenyon inadvertently admitted that "creation-science" was supernaturalism.

On January 10, 1985, the district court granted summary judgment for the plaintiffs and declared the Louisiana statute to be unconstitutional. The defendants appealed. On July 8, the U.S. Court of Appeals for the Fifth Circuit affirmed the district court's judgment. On December 20, the defendants appealed to the Supreme Court.

When the Louisiana "creation-science" case reached the Supreme Court, it was retitled *Edwards v. Aguillard*. Louisiana's governor, Edwin W. Edwards, who had been the namesake defendant in the lower courts, was now one of the appellants—the parties who had initiated action in the Supreme Court. Don Aguillard, who had been the namesake plaintiff in the lower courts, was now one of the appellees.

On March 12, 1986, the appellants filed a jurisdictional statement asking the Court to reverse the action of the district court—either because the use of summary judgment had been a procedural error or because the district court had misapplied the First Amendment—and to order a trial.

The appellees opposed this. On April 14, they filed a motion for the Court to affirm the proceedings that had culminated in the court of appeals.

The next events of importance came in the middle of the summer, as the Supreme Court received *amicus curiae* briefs. These were briefs from parties who were not involved in *Edwards v. Aguillard* but who had an interest in its outcome and who wanted to present facts, analysis, and recommendations that might help the Court to resolve it. Sixteen such briefs were filed: four supporting the appellants, twelve supporting the appellees. Collectively they bespoke the importance that the case carried now that it was before the highest arbiters of constitutional law. In each of several instances, a single brief for the appellees represented a long list of *amici* that included some of the most prominent scientists, scientific organizations, and educational organizations in the United States.

An outstanding brief was the one that spoke for seventy-two Nobel laureates in natural science, joined by twenty-four scientific organizations.[18] One reason why it was outstanding was that its sponsors had made it so. On the day when they filed it (August 18), they convened a press conference at which three scientists explained why the Nobelists had undertaken to advise the Court. These spokesmen explicated "creation-science," denounced the Louisiana statute as a deception, and told how the teaching of "creation-science" would deceive children and would undermine science education. The conference was covered well by the press, and stories based on it appeared in many publications.[19]

The brief was outstanding too because there never before had been a document, about anything, endorsed by so many Nobel laureates. They represented many and diverse disciplines, including cosmology, theoretical physics, experimental physics, organic chemistry, physical chemistry, molecular biology, genetics, physiology, cytology, and virology. Their participation in the brief had been organized by Murray Gell-Mann, of the California Institute of Technology, who had won a Nobel Prize for his work in the physics of elementary particles.

In the brief's introductory statement, the Louisiana case was described as crucial to the future of science education throughout the country:

> Teaching religious ideas mislabeled as science is detrimental to science education. It sets up a false conflict between science and religion, misleads our youth about the nature of scientific inquiry, and . . . [will] strip our citizens of the power to distinguish between the phenomena of nature and supernatural articles of faith. "Creation-science" simply has no place in the public schools.

The body of the brief offered two principal arguments, of which the first focused on the legislative record. It showed that the "creation-science" of the statute was, and had been understood by the Louisiana legislature to be, orthodox "creation-science"—not the "abrupt appearance" construct suggested by the appellants. It also told how the functional definition of "creation-science" had been removed from the statute's original text. (My own account of that event, in Part 1 of this article, was based on the account in the Nobelists' brief.)

The second argument concentrated on a feature of the statute that I have not mentioned heretofore: its mandating that scientific knowledge of evolution must be "taught as a theory, rather than as proven scientific fact." That prescription, or something like it, has occurred in virtually all the laws, regulations, curriculum restrictions, and textbook restrictions that fundamentalists have secured in recent years for stifling the teaching of evolutionary science in public schools.[20]

The Nobelists showed that the prescription had no basis in science and could be explained only as an effort to disparage evolutionary science for the sake of fostering sectarian religious beliefs. The "taught as a theory" rule required schools to misrepresent facts as theories, misuse the word *theory*, and distort the way in which facts and theories were related. Moreover, the rule applied only to the science that addressed "origins"—as if that science were less respectable and less reliable than all other science:

> The conclusion is clear: the Act, however construed, is structured "to convey a message that religion or a particular religious belief is favored or preferred."... Scientists do not single out "origins" for characterization as a "theory." Holders of a particular religious belief do.

A brief by the National Academy of Sciences was given partly to dissolving the cosmetic, one-sentence paragraph in which the Louisiana statute said that its purpose was "protecting academic freedom." The Academy, explaining that the statute really would do the opposite, called attention to what, perhaps, had been the creationists' major objective from the outset: not to promote "creation-science" but to establish an atmosphere of anxiety that would dissuade teachers from mentioning evolution.

> The Act does not require the teaching of either evolution or creationism, but does require that "creation-science" be taught if evolution is taught. Science teachers who wish to avoid confusing, misinforming or manipulating their students may choose to avoid areas which trigger the Act's "balanced treatment" requirement by refraining from teaching evolution altogether. Creationists would thereby have achieved the results forbidden by this Court's ruling in *Epperson v. Arkansas*, . . . which held that a state could not ban instruction in evolution. Academic freedom is badly served by an Act which . . . persuades [teachers] to abandon the teaching of the best theoretical framework science currently has to offer.

The statute's unique and disparaging treatment of evolutionary science was condemned also in a brief from twenty-five *amici* that included People For the American Way (a civil-liberties group), the National Education Association, the National School Boards Association, the American Society of Biological Chemists, the American Society of Zoologists, and the Federation of American Societies for Experimental Biology. (This last has some 26,000 members, all elected in recognition of their scientific attainments.) Here is an excerpt:

> The Balanced Treatment Act is a unique incursion by the Louisiana legislature into the public school classroom. The Act is not part of any general legislative program of curriculum oversight or designation. It singles out creationism, alone among all the alternative explanations of origins, labels it "science" and requires that it be taught whenever evolution is taught. By so doing, the Act accords to creationism a favored status. This special status is enhanced by the Act's prohibition of discrimination against those who teach creationism and its failure to afford the same protection to those who teach evolution. . . .
>
> By thus singling out creationism for favored treatment and evolution for disfavored treatment, the Act reflects a legislative purpose to further one particular religious doctrine.

The State of New York, joined by the State of Illinois, sent a brief that emphasized textbooks and described the predictable way in which publishers of textbooks would respond if the Louisiana law were allowed to stand. The publishers, the brief told, do not honor "principles of scholarly integrity"; they simply do whatever may help them to gain markets. If the Louisiana law were enforced, and if other states passed similar laws, publishers would not hesitate to put "creation-science" into the science books that they sell throughout the country. As a result, even New York and Illinois would be forced to use books that foisted religious dogmas, labeled as science, onto students in public schools.

ORAL ARGUMENT IN THE SUPREME COURT

The oral argument in a Supreme Court case is a one-hour proceeding that typically includes much give-and-take: the justices pose substantive questions to the lawyers representing the litigants and may even debate with them about legal theory and doctrines.

The Court heard oral argument in *Edwards v. Aguillard* on December 10, 1986.

Wendell Bird, for the appellants, conceded that some of the Louisiana legislators who had supported the "balanced treatment" bill might have had religious motives. He insisted, however, that the primary purpose of the statute was to advance academic freedom. This effort eventually evoked a hypothetical question from the bench: suppose that a legislature were hostile to the teaching of German and that it therefore adopted a statute requiring that any teaching of German be balanced by instruction in French as well; would such a rule advance academic freedom?

Bird's effrontery did not fail him: "Yes, it would," he answered.[21]

The appellees were represented by Jay Topkis, of the law firm of Paul, Weiss, Rifkind, Wharton & Garrison (in New York). Topkis, who had entered the case in response to a request by the American Civil Liberties Union, iterated that the Louisiana statute's only purpose was religious: blocking the competent teaching of the science that fundamentalists anathematized. In supporting this contention, he made a telling point by disclosing the connection between Jerry Falwell's Bible college and Terry Miethe (the self-proclaimed philosopher and theologian who had provided one of the creationists' affidavits), and by noting that Miethe had concealed this connection when he wrote his affidavit. Topkis scorned Bird's assertion that the "creation" in the statute was something different from the religious concept of creation, and he compared Bird to Humpty Dumpty in Lewis Carroll's *Alice Through the Looking Glass:*

"He wants words to mean what he says they mean," Topkis said. "And that didn't fool Alice, and I doubt very much it will fool this court."

"Don't overestimate us," Chief Justice William Rehnquist replied. His remark evoked much laughter in the courtroom, as was noted in news reports about the session.[22] It was more than funny, however. It was also prophetic.

THE SUPREME COURT'S DECISION

The Court issued its decision on June 19, 1987. Dividing 7 to 2, it affirmed the proceedings in the lower courts and thus affirmed that the Louisiana statute was unconstitutional. The dissenters were Rehnquist and the newest member of the Court, Justice Antonin Scalia.

The Court's opinion, written by Justice William Brennan, made these principal points:

- The statute was patently unconstitutional because (as the district court had found) it had no clear secular purpose. It did not enhance academic freedom, did not enhance the flexibility of the science curriculum, and did not even promote the "fairness" that the Louisiana creationists had invoked in defending it. Instead, it showed a discriminatory preference for the teaching of "creation-science" and against the teaching of evolution. The statute sought to discredit evolutionary science by offsetting it at every turn with "creation-science."
- The statute impermissibly endorsed religion by advancing the religious belief that humans had been created by a supernatural being. The legislative record showed that the Louisiana legislature had understood "creation-science" to embrace that belief. The statute's primary purpose was to change the public-school science curriculum in a way that would give persuasive advantage to a religious doctrine that entirely rejects the concept of evolution.
- The district court had not erred in granting summary judgment. The Louisiana creationists, in trying to preclude summary judgment by alleging that there were unanswered questions of fact, had relied on the affidavits of Dean H. Kenyon and the four other affiants. These affidavits, composed after the enactment of the Louisiana statute, could not illuminate the Louisiana legislators' purpose: none of the affiants had participated in, or contributed to, the enactment.

ANTONIN SCALIA'S FANTASTIC DISSENT

Even so, those affidavits made two more appearances, for they were invoked twice in the long, fantastic dissent issued by Rehnquist and Scalia. Written by Scalia, it contended that the record in *Edwards v. Aguillard* did not justify the majority's finding that "creation-science" was supernaturalistic or that the primary purpose of the Louisiana statute was to promote a religious doctrine.

Scalia said that "creation-science" was clearly a "term of art"—a term from the lexicon of a particular art, trade, or profession; and he pointed out that Louisiana law required that such a term be interpreted by its "received meaning and acceptation" among practitioners of the pertinent occupation. Then:

> The only evidence in the record of the "received meaning and acceptation" of "creation-science" is found in five affidavits filed by appellants. In those affidavits, two scientists, a philosopher, a theologian, and an educator, all of whom claim extensive knowledge of creation-science [*sic!*], swear that it is essentially a collection of scientific data supporting the theory that the physical universe and life within it appeared suddenly and have not changed substantially since appearing.... At this point, then, we must assume that the Balanced Treatment Act does *not* require the presentation of religious doctrine.

Scalia next cited some earlier Supreme Court cases and extracted two principles from them. First, he announced, the "purpose" of a legislative action meant "the 'actual'

Creationist dinosaurology:
"In the original Creation dinosaurs were certainly not vicious or troublesome. When God finished making the animals he said they were all *'very good' . . . . Originally, dinosaurs must have been harmless—designed to delight man and benefit the world, just like all the other animals. When first created, all dinosaurs ate only plants and fruits." From Paul S. Taylor. 1987.* The Great Dinosaur Mystery and the Bible. *Master Books. El Cajon, CA.*

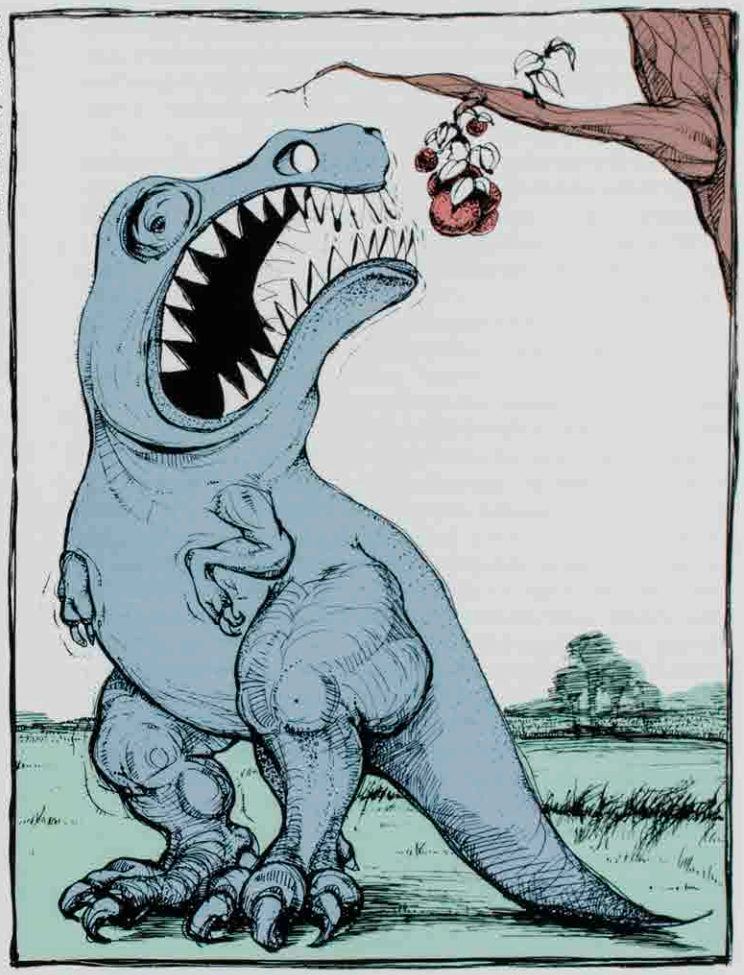


Illustration by R. M. Kato

motives of those responsible for the action." Second, Scalia divined, a statute could be nullified under the secular-purpose criterion only if it had no secular purpose whatever. If *any* secular purpose could be inferred or suspected, the simultaneous existence of religious purposes would not justify nullification.

Against that background, Scalia offered an analysis of the legislative record. He summarized five themes, all dealing nominally with science or with education, in testimony that the Louisiana legislators had heard before they adopted the "balanced treatment" bill. All the testimony that Scalia chose to cite had come from Bill Keith (the state senator who had introduced the bill) or from witnesses who affected "academic credentials that may have been regarded as quite impressive by members of the Louisiana Legislature."

Scalia observed that Bill Keith had denied that he was seeking to advance a religious doctrine. He noted that the appellees had dismissed such statements by Keith as pure fantasy, but he did not find that dismissal credible. Why not? Because the appellees had not provided evidence of fantasy when the case was in the district court, but the appellants had "submitted the affidavits of two scientists, a philosopher, a theologian, and an educator, whose academic credentials are rather impressive." (And with that, the affidavits took their last bow.)

In Scalia's version of the legislative record, the Pro Family Forum never appeared; the legislature never heard about books from the Institute for Creation Research; Bill Keith's bill never listed doctrines about a creation from nothing, a young universe, biological "kinds," or a global catastrophe; and the bill never was sterilized by the removal of that list. The legislative record itself had now been sterilized, and by Antonin Scalia.

The effect was worst, perhaps, when Scalia cited Bill Keith's denials of religious motives but ignored statements in which Keith had said the opposite. Some of those statements had been noted by William Brennan in the opinion of the Court's majority. Brennan wrote:

> The sponsor of the Creationism Act, Senator Keith, explained during the legislative hearings that his disdain for the theory of evolution resulted from the support that evolution supplied to views contrary to his own religious beliefs. According to Senator Keith, the theory of evolution was consonant with the "cardinal principle[s] of religious humanism, secular humanism, theological liberalism, aetheistism [*sic*]."...The state senator repeatedly stated that scientific evidence supporting his religious views should be included in the public school science curriculum to redress the fact that the theory of evolution incidentally coincided with what he characterized as religious beliefs antithetical to his own.

If Antonin Scalia knew about any of that, he surely did not tell about it.

News reports about the Supreme Court's action were predictably shallow and obsequious in their treatment of Scalia's effort. Nearly all of them said something about it, and many quoted passages from it. (The *New York Times* seemed to be truly infatuated: along with its news story, it printed 20 column-inches of excerpts from the opinion of the Court, but 39 column-inches from the dissent.[23])

As far as I know, however, no story even suggested what was most material: for whatever reason, Scalia had written not about *Edwards v. Aguillard* but about an imaginary case that he himself had created, complete with imaginary experts and an imaginary record. Even if his legal theories were engaging, his facts were fantasies.

Scalia's exercise fared less well with the columnists who published analytical pieces during the ensuing week or so. George F. Will, for example, in the *Washington Post* for June 25, commented:

> In a dismaying dissent, Justice Scalia, joined by Chief Justice Rehnquist, suggests that it is unfair to infer a non-secular purpose to Louisiana's protection of "creation-science." Scalia takes seriously the legislature's words about "protecting academic freedom." But no one wants to protect academic freedom by requiring the teaching of flat-earth doctrines in geography classes or alchemy in chemistry classes. The difference is that no one reads those doctrines into the Book of Genesis.

Scalia says the views of the court "about creation science and evolution are (or should be) beside the point. Our task is not to judge the debate about teaching the origins of life, but to ascertain what the members of the Louisiana Legislature believed." Scalia's formulation is nonsense because "creation-science" is nonsense on stilts. . . . there is no scientific "debate" about whether evolution is a fact. The debate is about how evolution happens.[24]

Charles Krauthammer, writing a day later in the same paper, offered this:

Having spent 27 pages discerning the Louisiana legislators' purpose in passing this law and assuring us that it is secular (academic freedom), Scalia then argues, in the alternative, that the "purpose test" ought to be thrown out in Establishment Clause cases because "discerning the subjective motivation of those enacting the statute is, to be honest, almost always an impossible task." But Scalia concedes immediately that "it is possible to discern the objective 'purpose' of a statute" (as opposed to the subjective psychological purpose of the individual lawmaker) which he defines as "the public good at which its provisions appear to be directed." Well, in this particular case the public good, the objective purpose, is perfectly clear: to bring the Genesis story to schoolchildren. The purpose is patently religious. Scalia's case, as he defines it himself, collapses.[25]

LESSONS OF THE LOUISIANA CASE

In Part 1 of this article, I said that the facts and grand theme of the Louisiana case teach some potent lessons about creationism and creationists. One lesson is that the ideologues and strategists of creationism are not honorable unfortunates or good-willed ignoramuses; they are smart charlatans and educated tricksters. Another lesson is that they will spare no deception in their efforts to force their religion into public schools while forcing science out.

WHAT WILL THE CREATIONISTS TRY NEXT?

The Louisiana case was melodramatic and important, but it also was anticlimactic. The campaign to force "creation-science" into schools by legislation had been broken in 1982, when the Arkansas version of a "balanced treatment" law had been nullified. In Louisiana, the creationists were fighting a desperate rear-guard action that was bold, dirty, and doomed. The issue was not *whether* the Louisiana statute would be struck down but *when*—when and how and in what judicial setting.

If the creationists had prevailed in the Supreme Court and had secured an order for a district-court trial, they would have ensured that their statute would be tested not only against the secular-purpose criterion but against others as well. One of these says that a law is unconstitutional if, regardless of its purpose, its principal effect is to promote religion. Another forbids any law that, regardless of its purpose, creates an excessive entanglement of religion and government.

The very strategy on which the Louisiana creationists built their defense—the refusal to tell what "creation-science" was—signified that their statute, even if it had withstood the challenge posed by Don Aguillard and his allies, could not have been implemented without being destroyed.

Implementing the statute would have required that the governor appoint "creation-scientists" to give advice about a "creation-science" curriculum; that each local school board adopt curriculum materials in "creation-science"; that school libraries buy "creation-science" books if they owned any books about evolution; and that teachers actually present "creation-science" in classrooms if they taught about evolution. These provisions surely could not have been effected without identifying some of the substance, the literature, and the practitioners of "creation-science." And as soon as those things had been identified, new and irresistible First Amendment challenges would have been posed.

Did Wendell Bird and the others recognize this as they conducted their defense? It seems reasonable to speculate that they did, and it seems reasonable to speculate that they knew what they would do if, by some miracle, the day came when the statute could be enforced. They would produce a few "creation-science" pamphlets and a few "creation-scientists" that would indeed speak, with suitable circumspection, about "abrupt appearance." They would use these in the initial implementation of the statute. Only later would they bring real "creation-science"—orthodox "creation-science"—into the schools, presenting it as an elaboration of "abrupt appearance" and hoping that nobody would understand what was happening. I speculate, then, that their vision was much like their defense action: bold, dirty, and doomed.

In fact, some creationists had begun to work on an "abrupt appearance" version of "creation-science" when the Louisiana case still was young.[26] It could be found in creationist literature as early as the summer of 1983, when a prominent creationist advised his fellows to avoid several of their traditional topics and to focus on how the fossil record shows "the abrupt appearance of various life forms." The "abrupt appearance tenet," he said, was at the very core of "creation theory."[27]

We shall hear more about "abrupt appearance," whether it is called by that name or another one, as the creationists recover from the collapse of their legislative campaign and turn their energies back to the activities that historically have produced their biggest successes. Those activities have been aimed not at legislatures but at administrative agencies—local ones especially.

Some prominent creationists have been re-emphasizing local action since the time of the Arkansas case. They saw then that legislative spectacles would not work for them, because such spectacles must ultimately force them to

confront the U.S. Constitution, skillful lawyers, perceptive judges, and expert witnesses who really are experts. They have embraced safer alternatives, therefore, including some that are new variations on old themes. Here are some of the things that the creationists will be doing most assiduously during the coming decade:

■ The creationists will intensify their attacks on local school districts, individual schools, and individual teachers. They will use novel, specious assertions about civil rights, as well as their traditional tactics of harassment and intimidation, in demanding that evolutionary views of nature be excluded from curricula and classrooms.

■ Alternatively, the creationists will demand that any presentation of evolutionary science must include "all the evidence"—their euphemism for various doctrines of "creation-science."

In the context of paleontology, for example, telling "all the evidence" means telling students that the fossil record shows no evolutionary intermediates at all, and that it therefore indicates that all organisms appeared on Earth suddenly. That assertion is a mainstay of "creation-science," but it is simply false.

In evolutionary biology, telling "all the evidence" means telling students that a law of physics makes biological evolution impossible. No such law exists, however. In geology, telling "all the evidence" means reciting a fictitious story about errors in the radiometric dating of some Hawaiian lava, and then telling students that this story discredits all the radiometric determinations that have shown Earth to be billions of years old. In anthropology, telling "all the evidence" means telling students that all scientific inferences about ancient hominids have been shown to be erroneous fancies or deliberate tricks, like the Piltdown hoax. In genetics, telling "all the evidence" means telling students that biologists do not know of any way in which a genetic change could produce a truly new feature in a lineage of organisms. And that statement, too, is simply false.

The pseudoscience and phony history that creationists promote under the title "all the evidence" is uniformly nonsensical, but it can be effective in generating confusion and anxiety among school officials. (If anyone doubts this, he or she should call some members of local school boards, or some superintendents of local school districts, and ask them to describe some fossils of evolutionary intermediates or to recite some laws of physics.) This is the goal that the creationists will be seeking: to cause so much confusion and anxiety that educators will yield to them and will censor, distort, and corrupt the science curriculum.

■ The creationists will propagate their pseudoscience directly to science teachers, striving to sow misinformation about the content and status of evolutionary science in general and of evolutionary biology in particular. This effort will extend and exploit the successes that creationists gained many years ago in suppressing the presentation of evolutionary biology in public-school classes and public-school textbooks. Because of those successes, many of the people who now are teaching science know very little about biological evolution. They will be highly susceptible to the creationists' propaganda if it is presented with some trappings of respectability.

In this context, attention must be given to a very cogent article by the biologist Michael Zimmerman, of Oberlin College (in Oberlin, Ohio). Zimmerman questioned high-school biology teachers in Ohio, and he found them to be sorely ignorant of, or confused about, organic evolution:

> For example, when asked to choose the sentence best describing evolutionary theory from five choices offered, almost one-quarter indicated that evolution involved some sort of purposeful striving toward "higher life forms."
>
> Such a view, by postulating an externally directed purpose and direction to evolution, is antithetical to its main principles and is also beyond the realm of science. Only 11 percent [of the teachers] selected the right choice: that evolution occurs because individuals produce different numbers of offspring. Furthermore, only three-quarters of the teachers indicated that evolution has a valid scientific foundation. Imagine the uproar that would ensue if such erroneous views were presented to public school students in any other subject.
>
> What can one survey from Ohio tell us? Just this: that even in a northern industrial state that has experienced little pressure from creationists in recent years, creationist viewpoints are finding their way into public school classrooms. It tells us that the level of scientific sophistication, even among high school biology teachers, leaves much to be desired. Many of our teachers cannot successfully educate our children when they themselves display such ignorance of fundamental biological principles.[28]

■ As a part of their campaign to confuse and deceive educators, the creationists will try to place pseudoscientific articles into journals published by state or local associations of science teachers. Creationists cannot easily get their material into the journals of national organizations, such as the National Association of Biology Teachers, because those publications generally have plenty of good manuscripts from which to choose, as well as expert reviewers to winnow them. The journals of many state or local associations, however, suffer chronic shortages of manuscripts and reviewers alike. Creationists sometimes succeed in placing articles into such journals, if the nominal authors of the articles seem to have some connection with science or with education.

Another tactic, though a costly one, was tried recently by a religious organization that misleadingly calls itself the American Scientific Affiliation. The ASA is unusual among creationist groups because it seems to accept the fact that Earth is not thousands but billions of years old, and because it seems not to care about Noah's flood. It rejects evolutionary biology, however, and it denies that there is persuasive evidence that humans and apes share an ancestor. So, starting in the autumn of 1986, it mailed copies of a handsome, 48-page booklet of creationist pseudoscience to more than 50,000 high-school teachers.

The booklet was a deft attempt to convince teachers that scientific inferences about the history of life on Earth were just flimsy fancies. It was called *Teaching Science in a Climate of Controversy*, and it was framed as an appeal for "integrity" in education.[29] The writing was notably

restrained, sometimes even subtle, but the content was classic creationism: misrepresentation of facts, principles, and terms; distortive misquotations of scientific literature; and, of course, presentation of the Piltdown hoax as the didactic example of "how science works."[30]

■ The creationists will try to inject their pseudoscientific books and other religious tracts directly into public-school libraries and classrooms.

In one recent case, Teen Mission, U.S.A.—a fundamentalist group in Lexington, Kentucky—has tried to put a rather slick "creation-science" book into high-school libraries and to have it classified and displayed as a scientific publication. The book is *The Creation-Evolution Controversy*, by a creationist named Randy L. Wysong. In the flier that Teen Mission has sent to school librarians throughout the country, Wysong's work is falsely depicted as an objective work of science and scholarship. Teen Mission has offered a free copy of it to any librarian who wants one, with the proviso that the book must be placed "in the Science Reference section of the school's library."

Would any school librarian really order a "science" book from an outfit named "Teen Mission, U.S.A."? Could any librarian fail to grasp the significance of Teen Mission's repeated insistence that the book must be classified as a reference work about science? Could any librarian fail to understand why Teen Mission is unwilling to entrust classification to the librarian's own judgment?

The answer to each question, I think, is *yes*. I know that some earlier campaigns, similar to Teen Mission's, have succeeded in putting creationist tracts into school libraries and municipal libraries. I know too that many educators are still remarkably naive about creationism and about creationist methods, if only because their experience as educators has not equipped them to understand endeavors that are founded on continuous dishonesty.

While Teen Mission has been offering Wysong's book, Films for Christ (in Mesa, Arizona) has been offering two "creation-science" videotapes. Perhaps because the name "Films for Christ" is so blatant, this organization has not promoted its wares directly to educators; instead, it has offered the tapes to individual fundamentalists who will try specifically to have them shown in public schools. Films for Christ will lend the tapes, for that purpose, without charge. The tapes are entitled *The Great Dinosaur Mystery* and *The Fossil Record*.

The Great Dinosaur Mystery (which I consider to be the more interesting of the two) runs for some 18 minutes and consists almost entirely of illustrations and narrative from the book *The Great Dinosaur Mystery and the Bible*, by Paul S. Taylor. Taylor is a functionary of Films for Christ. His book was issued last year by the publishing division of the Institute for Creation Research.[31]

The tape makes some references to biblical passages about big creatures, but it omits most of the stridently religious material that dominated the book. For example: it does not (as the book did) say that "Like Adam, the bodies of the first dinosaurs were formed [directly by God] from the dust of the earth." It does not (as the book did) show Adam with a dinosaur in the Garden of Eden. It does not (as the book did) tell that all the dinosaurs were placid pets that "ate only plants and fruits." It does not (as the book did) show dinosaurs marching into Noah's Ark. And it does not (as the book did) declare that "Dinosaur fossils are reminders of the Great Flood" or that "The Flood reminds us of God's punishment for sin—death" or that "There is nothing that you can do to save yourself. Only Jesus can save you."

Paul Taylor's book did all those things, but the videotape neglects them. It concentrates instead on the fanciful and deceptive material by which Taylor tried to convince children that humans and the great dinosaurs have lived at the same time. That doctrine (as I noted in Part 1 of this article) is a conspicuous item of "creation-science" and is derived from the fundamentalists' notion that Earth is only 6,000 years old.

In accordance with the creationists' devotion to deception, the closing credits of *The Great Dinosaur Mystery* do not mention Paul Taylor's book or Films for Christ.[32]

■ The creationists will produce a new version of their pseudoscience, and they will try to induce respectable, secular publishers to issue books incorporating the new material. They will hope to use the books for validating their litany about teaching "all the evidence" and for validating the misinformation that they will be spreading among science teachers.

Because the term "creation-science" has been sullied, most recently in *Edwards v. Aguillard*, the creationists' new pseudoscience will carry a new name, or perhaps several new names. Its content will be fully sterilized: it will avoid explicit supernaturalism, and it will speak not of any god but of a nebulous "intelligence" or "intelligent cause." It will be much more sophisticated than orthodox "creation-science" because it will shun created "kinds," a worldwide flood, and other topics that clearly point to episodes in the Bible. Its literature will avoid blatant references to the literature of orthodox "creation-science" and will be untainted by any obvious connections to fundamentalist ministries or to fundamentalist publishers.

The development of this new material began several years ago, and the most notable work has been done by the Foundation for Thought and Ethics, a creationist group in Richardson, Texas. So far, the outstanding product of the Foundation's effort has been a book called *The Mystery of Life's Origin*. The Foundation sponsored the writing of the manuscript, then arranged for it to be published by Philosophical Library, a trade-book company.[33]

The Mystery of Life's Origin was an interesting work. Much of it was a respectable critique of experiments and hypotheses related to current scientific thought about the beginning of life on Earth. Only in their summary and epilogue did the authors betray the religious principle and purpose that had animated them. Their principle was this: because existing organisms are terribly complex, and because scientific attempts to explain the origin of these complex things are fraught with difficulties, some other approach should be invoked. Their purpose was to propose that all of science should be divided into two discrete endeavors. One of these, "operation science," would seek to explain how the universe is operating right now; it would be naturalistic and uniformitarian, and it would

correspond to what now is simply called science. The other endeavor, "origin science," would consider how the universe worked in the past; it would not be constrained by naturalism or by the canons of scientific reasoning, and it could invoke, at will, the notion of an intelligent manipulator or creator.

The authors did not suggest how the line between present and past, or the line between "operation science" and "origin science," could be drawn in a practical context. They seemed not to have thought of such questions, and their exercise was as foolish as it was transparent.

Astute reviewers perceived easily that *The Mystery of Life's Origin* was merely a new essay in creationist pseudoscience, albeit a rather slick one. Some reviewers, however, were not astute (or did not read to the last chapters), and the book received some favorable notices. It probably has gulled a lot of ordinary readers, too—readers who could not have known the true significance of its carrying a foreword by "Dean H. Kenyon, Professor of Biology, San Francisco State University."

The Foundation recently has been seeking a publisher for another manuscript, *Biology and Origins*. One of the two authors is Dean Kenyon; the other is P. William Davis, who teaches biology at Hillsborough Community College, in Florida. The content of the manuscript is just a sterilized restatement of traditional creationist material about organisms, fossils, and biology, and essentially all of it has been seen, many times, in earlier creationist tracts. To a reader who knows its sponsors and purposes, it seems unremarkable. Much more interesting is the way in which the Foundation has been trying to recruit a publisher.

The Foundation wants *Biology and Origins* to become a school book and to carry its sterilized fundamentalism directly into public-school science classrooms. Accordingly, the Foundation wants the manuscript to be published by a company that already has a reputation for issuing respectable books and that will market *Biology and Origins* to educators. As a part of its effort to place the manuscript with such a company, the Foundation sponsored, in the spring of 1986, an antic "opinion poll" of biology teachers. The poll was manifested in a questionnaire that (the Foundation says) was mailed to teachers in several states. It comprised fifteen substantive questions that had been contrived, rather grossly, to elicit some kind of support for what the Foundation, since then, has been telling to prospective publishers. Most biology teachers, the Foundation says, think that creationist doctrines should be brought into science classes to countervail evolutionary views, and most would welcome a supplemental text that would help them to present creationist doctrines in their own classrooms!

In truth, the questionnaire never asked specifically whether the teachers thought that creationism belonged in science classes; it merely asked how they would treat an unspecified "plausible alternative to the dominant scientific theory." Nor did it ask whether teachers wanted a supplementary book about creationism; it merely asked whether they would welcome material that would analyze "the dominant theory" and the unspecified "plausible alternative." The Foundation, however, has interpreted the questions, and the alleged results of the survey, in a very free and misleading way. Equipped with those results, it has been promoting the *Biology and Origins* manuscript vigorously.

I do not know, at this writing, whether the Foundation has found a publisher. I do know that it has made a fine demonstration of its thought and ethics. It also has made a fine demonstration of some techniques that creationists will be favoring now that their adventure in Louisiana is finished.

Acknowledgments *Thomas H. Jukes, of the University of California at Berkeley, criticized drafts of both parts of this article, and he made many valuable suggestions. Beth S. Kaufman, of the law firm of Caplin and Drysdale, in Washington, provided copies of many legal documents related to* Edwards v. Aguillard. *My description of* amicus curiae *briefs filed in* Edwards v. Aguillard *was derived from a report that I wrote in 1986 for the* California Science Teacher's Journal. *I thank David Stronck, the editor of the* Journal, *for his permission to adapt that material.*

REFERENCES

18. Amicus Curiae *Brief of 72 Nobel Laureates, 17 State Academies of Science, and 7 Other Scientific Organizations, in Support of Appellees*, in the Supreme Court of the United States, case 85-1513, filed on 18 August 1986.
19. See, for example:
P. J. Hilts. 19 August 1986. Nobelits assail "creation science" law. *Washington Post*.
R. Engelman. 19 August 1986. Top scientists urge ban on "creation science" courses. *Houston Chronicle*.
S. Taylor, Jr. 19 August 1986. 72 Nobelists urge high court to void Louisiana creationism law. *New York Times*.
J. Palca. 1986. Nobel laureates go into battle. *Nature* **322**:675.
20. See, for example:
Textbook Evaluation Form—1985 issued by the Curriculum Development and Supplemental Materials Commission of the California State Board of Education.
W. J. Bennetta. 1985. Looking backward. *Pacific Discovery* **38**(4):23–29.
W. J. Bennetta. 1985. Faking it. *Pacific Discovery* **38**(4):29–34.
21. *Official Transcript . . . Dkt./Case No. 85–1513*. Alderson Reporting. Washington.
22. See, for example: Anonymous. 11 December 1986. High court hears opposing views on "creation" law. *New York Times*.
23. Anonymous (editor). 20 June 1987. Excerpts from Supreme Court opinions in creationism case. *New York Times*.
24. G. F. Will. 25 June 1987. Good grief, Scalia! *Washington Post*.
25. C. Krauthammer. 26 June 1987. The last monkey trial? *Washington Post*.
26. F. Edwords. 1982. The incredible shrinking creation model. *The Humanist* **42**(5):44.
27. L. D. Sunderland. 1983. Evolutionist tactics. *Bible-Science Newsletter* **21**(6):6.
28. M. Zimmerman. 1 September 1987. That court ruling won't stop the creationists. *Washington Post*.
29. D. Price, J. L. Wiester, and W. R. Hearn. 1986. *Teaching Science in a Climate of Controversy*. American Scientific [*sic*] Affiliation. Ipswich, MA.
30. For analyses of some of the distortions, misrepresentations and pseudoscientific fables that were promulgated in the ASA's booklet, see:
W. J. Bennetta. 1987. A question of integrity. *California Science Teacher's Journal* **17**(2):8–13, 17.
W. J. Bennetta (editor). 1987. Scientists decry a slick new packaging of creationism. *The Science Teacher* **54**(5):36–43.
31. P. S. Taylor. 1987. *The Great Dinosaur Mystery and the Bible*. Master Books. El Cajon, CA.
32. My description of the recent antics of Teen Mission and of Films for Christ has been adapted, with permission, from an article that I published earlier in this year: W. J. Bennetta. 1988. Telling a you-know-what for you-know-whom. *California Science Teacher's Journal* **18**(3):10–12.
33. C. B. Thaxton, W. L. Bradley, and R. L. Olsen. 1984. *The Mystery of Life's Origin: Reassessing Current Theories*. Philosophical Library. New York.

Continued from page 2

bag was given to each guest courtesy of Roundelay Productions, and Diamond Couples also received a special dinosaur pin with a diamond eye to commemorate their participation in this memorable evening. The Alliance Board thanks the following Sponsor, Gem, and Diamond Couples whose contributions to the success of the Diamond Jubilee Edition of the Dinosaur Ball support the Museum's exhibitions and educational programs:

DIAMOND JUBILEE SPONSOR
Mr. George C. Page

DIAMOND SPONSORS
Mr. and Mrs. David Jacobs
Mr. and Mrs. Roy Nutt
The House of Harry Winston

JUBILEE GEMS
J. B. D. Holding Corporation
Mrs. Maurice Machris
Mr. and Mrs. James Stewart
Mr. and Mrs. Dwight G. Vedder

ANNIVERSARY SPONSORS
Ms. Barbara Walters and Mr. Merv Adelson
Atlantic Richfield Company
Mr. and Mrs. Robert S. Attiyeh
Mr. and Mrs. Gordon H. Behn
Millicent H. Boudjakdji
Mrs. Justin Dart
Mr. and Mrs. Douglas C. Gregg
Mr. and Mrs. Ed N. Harrison
Mr. and Mrs. Allan M. Herbert
Mr. and Mrs. Marshall I. Kass
The Newhall Land and Farming Co.
Occidental Petroleum Corporation
Mr. and Mrs. Stephen R. Onderdonk
Mr. and Mrs. Thomas Reddin
Rockwell International
Lorraine P. Young

DIAMOND COUPLES
Mr. and Mrs. Gosta I. Ahlen
Mr. and Mrs. Charles A. Alders
Mr. and Mrs. Robert S. Attiyeh
Mr. and Mrs. R. Stanton Avery
Mr. and Mrs. Gordon H. Behn
Mr. and Mrs. Walter S. Berkman
Mr. and Mrs. William J. Bird
Dr. and Mrs. Craig C. Black
Mr. and Mrs. Neal Brockmeyer
Liisa Ann Larson and Steven A. Buehler
Mr. and Mrs. George V. Caldwell
Mr. and Mrs. Edward M. Carson
Mr. and Mrs. Nathan W. Cohen
Mr. and Mrs. C. Warren Driver
Mr. and Mrs. John K. Duncan
Dr. and Mrs. Theodore J. Eckberg
The Honorable and Mrs. Robert Feinerman
Mr. and Mrs. George R. Fritzinger
Mr. and Mrs. A. Frederick Gerstell
Mr. George Struever and Mrs. Pauline Graves
Mr. and Mrs. Stephen E. Griffith
Mr. and Mrs. Henry S. Grossman
Mr. and Mrs. Melvin A. Gustafson
Mr. and Mrs. John Hancock
Mr. and Mrs. Ed N. Harrison
Mr. and Mrs. Fred L. Hartley
Mr. and Mrs. Allan Herbert
Mr. and Mrs. Gene Hoggatt
Mr. and Mrs. John F. Hotchkis
Drs. John and Patricia House
Mr. and Mrs. Harry B. Irvine
Mr. and Mrs. David Jacobs
Mr. and Mrs. Melvin Jacobs
Mr. and Mrs. Marshall I. Kass
Dr. and Mrs. Lindbergh Kawahara
Mr. and Mrs. David C. Knight
Mr. and Mrs. Sheldon Krechman
Mr. and Mrs. Ronald G. Lee
Mr. and Mrs. Kenneth Leventhal
Mr. Robert M. Leventhal
Mr. Ross O. Leventhal
Mr. and Mrs. Ernest Lever
Mr. and Mrs. Marvin Lewis
Mr. and Mrs. Dennis Howard Lowe
Mrs. Maurice Machris
Mr. and Mrs. Chris Mays
Mr. and Mrs. John L. Meek
Mary Catharine Harold McBride and Kevin McBride
Mr. and Mrs. Gregory Royce McClintock
Mr. and Mrs. Ray T. McCullough
Mr. and Mrs. A. D. McKelvey
Mr. and Mrs. J. Arthur Mesch
Mr. and Mrs. William A. Mingst
Mrs. Fred Nason
Ms. Deborah Nickson
Mr. and Mrs. Roy Nutt
Mr. and Mrs. Stephen R. Onderdonk
Mr. and Mrs. A. F. Osterloh III
Mr. and Mrs. Charles O. Parker II
Mr. and Mrs. Frank Pietrocarli
Mr. and Mrs. Dan Pocapalia
Mr. and Mrs. Stuart Raffel
Mr. and Mrs. Thomas Reddin
Mr. and Mrs. Charles E. Rinsch
Mr. Darryl Korn and Miss Tani Sackler
Mr. and Mrs. Hyman Savinar
Lillian Paul Seitsive, M.D.
Dr. and Mrs. Robert Sloves
Mr. and Mrs. Russell Dymock Smith
Dr. and Mrs. Norman F. Sprague III
Mr. and Mrs. James Stewart
Mr. and Mrs. Irving Stone
Mr. and Mrs. James N. Thayer
Mr. and Mrs. Dwight G. Vedder
Mr. and Mrs. Jack Young
Mr. and Mrs. William R. Zimmerman

Museum Receives Major Exhibit Underwriting. The museum gratefully acknowledges the Milken Family Foundation, which, with the cooperation of the Hebrew Union College Skirball Museum and a gift from Victor M. and Adrea Carter, made possible the Los Angeles exhibition of **King Herod's Dream: Caesarea on the Sea.** Additional assistance for this exhibit, which will be at the museum through October 9, was provided by Newton Becker. For information about exhibit underwriting, contact John Charnay, Director of Marketing, at (213) 744-3314.

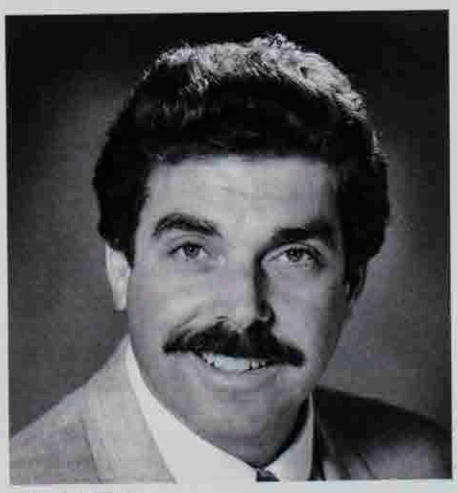
Welcome to KCET Members Accepting Six-Month Membership Offer. In conjunction with the KCET Plus Program,

Celebrating a smashingly successful Diamond Edition Dinosaur Ball are Dr. and Mrs. Craig C. Black, between whom stands Mrs. Joe Walsh III, and Mrs. and Mrs. David Jacobs. Mrs. Jacobs chaired the 1988 Dinosaur Ball. Photograph by Dick Meier.

the Natural History Museum offered a six-month free membership to KCET subscribers who joined the museum during the month of June. To the more than 1,900 KCET subscribers who took advantage of this opportunity, the museum extends a note of welcome, with the hope they will visit the museum frequently and choose to continue supporting the museum beyond this six-month period.

The Museum Welcomes Rick Owston, Superintendent of Craft Services. We are happy to announce that Rick Owston is our new Superintendent in charge of Craft Services, General Services, and Audio Visual. Rick transferred to the Museum of Natural History from the county Facilities Management Department where he was employed in a supervisory capacity over the Masonry Crafts encompassing all of Los Angeles County.

Before his employment with FMD Rick was a Superintendent and Project Manager for a large general construction firm based in Orange County. At that time Rick worked on development and construction of commercial buildings, shopping malls, restaurants, and multi-housing units. Prior to that, he was a masonry contractor and contractor builder specializing in custom construction and brickwork.



Dick Meier

Rick Owston

MARTHA MAXWELL: ROCKY MOUNTAIN NATURALIST by Maxine Benson, University of Nebraska Press, 1986, $23.95.

When Martha Maxwell (1831–81) displayed her natural history specimens at the U.S. centennial celebration in Philadelphia, she was at the peak of her professional career. Largely a self-taught naturalist and taxidermist who collected her own specimens (the only women to do so at her time), Maxwell was among the first to create habitat groups and was in the vanguard of museum philosophy in this country.

Maxine Benson's book presents an engaging account of Maxwell's life. Maxwell spent her childhood in Pennsylvania, Illinois, and Wisconsin and received some schooling at Oberlin and Lawrence colleges. She then married and moved to the gold fields of Colorado, where she began hunting and mounting wildlife specimens and, eventually, exhibiting them in her own museum. Benson, in addition to presenting a fine portrait of this fascinating woman, does an excellent job of putting Maxwell's life in historical perspective. Thus the book is also about nineteenth-century education for women, feminism, museums and habitat groups, and family relationships.

Benson writes that Maxwell lived in a period when most women who attended college were heavily influenced by reform ideals. She shows that while Maxwell was involved in some reform activism as a prohibitionist, she viewed her professional accomplishments as her best contributions, especially to the cause of feminism. "The greatest desire of my life," Maxwell wrote in 1875, "is to help inspire women with confidence in their own resources and abilities." She described her life as "one of physical work, an effort to prove the words spoken by more gifted women," and explained that "the world demands proof of woman's capabilities, without it words are useless."

Maxwell's work did inspire respect. When she opened her own museum in Boulder, Colorado, Maxwell envisioned it as a popular attraction that would be both scientific and educational. She displayed her mounted animals against artistic backdrops reflecting the animals' natural habitats. Elliot Coues, an eminent Smithsonian natural scientist, wrote that Maxwell's collection of animals was "mounted in a manner far superior to ordinary museum work" and praised her method as "a means of popularizing Natural History and making the subject attractive to the public."

"The greatest desire of my life," naturalist Martha Maxwell wrote in 1875, "is to help inspire women with confidence in their own resources and abilities." She described her life as "one of physical work, an effort to prove the words spoken by more gifted women," and explained that "the world demands proof of woman's capacities; without it words are useless."

In addition to discussing Maxwell's career, Benson analyzes Maxwell's personal life. She convincingly describes Maxwell's relationships with her sister and daughter, but her characterization of Maxwell's marriage is less persuasive. Maxwell and her sister enjoyed a deep, loving relationship, which was Maxwell's main source of emotional support. She had one daughter, whom she hoped would share her passion for learning and professional excellence. Both mother and daughter, however, were disappointments to one another. Maxwell's daughter resented what she saw as her mother's preoccupation with work, while Maxwell regretted that her daughter was more interested in fashion and housekeeping than in intellectual pursuit.

Benson also argues that Maxwell's marriage was a disappointment to her and, as evidence, points to the many long separations when Maxwell was pursuing her career or caring for other family members outside of Colorado. Unfortunately, not many letters between Maxwell and her husband survive to clarify their relationship. Benson concludes that Maxwell's decision to stay away from her husband on several occasions revealed a dissatisfaction with the marriage. Yet it is equally plausible that Maxwell had precisely the relationship with her husband that she wanted. Clearly it was not the traditional nineteenth-century marriage, but Maxwell was not the traditional nineteenth-century woman. While married, Maxwell insisted on earning her own money (initially for her own sake and later to ensure that she would be able to put her daughter through college), paying her

husband when he assisted her on hunting expeditions, and developing personal and professional relationships of her own. In short, Maxwell's marriage provided the freedom she needed to maintain her independence and pursue her love of science.

Maxine Benson's biography of Martha Maxwell is well written and well researched. Readers with an appreciation for natural history museums, an interest in women's history, or simply a desire to immerse themselves in a good story set in the nineteenth century will enjoy this book.

Janet Evander
Seaver Center Archivist

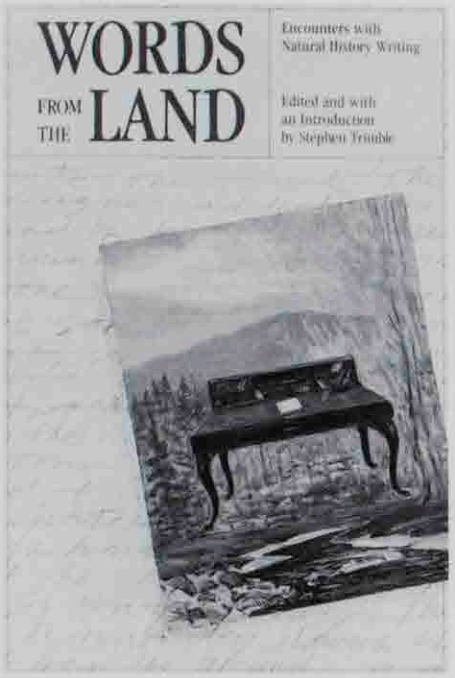
WORDS FROM THE LAND: ENCOUNTERS WITH NATURAL HISTORY WRITING edited by Stephen Trimble. Peregrine Smith Books, 1988, $17.95.

Ever since I made the momentous discovery that reading could be a pleasurable activity and not just a joyless chore imposed on me at school, I've taken special delight in anthologies. For if the subject interests, what could be more useful, more joyful than partaking of a cornucopia of writings both new and familiar to me? And I don't know honestly which is better—being introduced to an enchanting author or renewing an old literary friendship. Of course, what distinguished a memorable anthology from a mediocre one is the quality of the selections. With that criterion in mind, it is a pleasure to report that, for those of us who enjoy the literature of natural history, we now have a multi-course gourmet feast in *Words from the Land.*

In his introduction, editor Stephen S. Trimble makes a large claim for contemporary nature writers: "They articulate our neglected connections with the rest of the living world in language both passionate and thoughtful." The fifteen "writers from the land," whose essays compose his anthology, fulfill Trimble's requirements, though each reader will naturally have his or her favorites.

It is heartening, too, that the oldest selection reprinted here is copyrighted 1973, while most of them were published in the 1980s. What is less encouraging is the realization that such an excellent genre is so neglected for the most part.

Familiarizing the literate public with this body of writing is one of Trimble's expressed motivations for compiling his anthology, and one can only wish him



success in this worthy endeavor. However, Trimble's desire to acquaint us with these fine writers also leads him "to illumine their methods and to try and define the heart and spirit of their work." This ambitious aim misses the mark. For my part, I would have much preferred the inclusion of another selection than the space Trimble devoted to the bits and snippets of interviews he conducted with nine writers, and which make up the bulk of his graceless and interminable introduction, which he entitled "The Naturalist's Trance." I was less than entranced by Trimbles's apparent need to inform us about the everyday working habits of these accomplished writers, and I would feel the same way about the esoteric revelations of my optometrist or auto mechanic. Even well-meaning declarations about the importance of preserving the natural world are unnecessary, for that article of faith is better demonstrated in the writings themselves.

The introduction aside, the hungry reader can move on to the first course of this literary banquet—Annie Dillard's poetic and thoughtful essay on the Galapagos Islands, "Life on the Rocks." Ah! At once my enthusiasm for this project returns. Trimble shows me that he is a perceptive reader, which, after all, is what we expect of an anthologist. Nor was I disappointed throughout the remainder of *Words from the Land.*

And what a variety of lands are encountered in the words of this volume. Within its pages you will join Peter Matthiessen in the Himalayas as he searches for the elusive and exotic snow leopard; You will accompany the acerbic Edward Abbey down the Green River of Utah, while he muses on the life and craft of Henry David Thoreau, perhaps our greatest literary naturalist. You will keep company with Gretel Ehrlich, while a Wyoming winter "laminates the earth with white." And with Gary Nabhan you will explore the bizarre ecology of the Sonora Desert.

If the landscapes are diverse, so are the words that are inspired by them. There are factual reports based on meticulous research and there are impressionistic essays that magically transform the mundane into another realm of being. What one senses in all these writers is a passionate love of our wondrous planet. That they are able to express this passion so well and wish to share it with us is reason to rejoice.

Burton Reiner
Assistant Curator,
History Division

VECTORS OF DEATH: THE ARCHAEOLOGY OF EUROPEAN CONTACT by Ann F. Ramenofsky. University of New Mexico Press, 1987, $27.50. *AMERICAN INDIAN HOLOCAUST AND SURVIVAL: A POPULATION HISTORY SINCE 1492* by Russell Thornton. University of Oklahoma Press, 1987, $29.95.

The term "holocaust" raises images of ultimate human-rights violations resulting from the totalitarian regimes of the twentieth century, symbolized most forcefully by the Nazi death camps. Thus we often overlook (or ignore) earlier atrocities, especially insofar as this behavior reflects the racism and hatred endemic in American history.

Recent studies on the demise of the North American Indians, however, forces us to accept the grim fact that racism and ethnic persecution did not originate with Hitler and the twentieth century, but is embedded deeply in the American past.

Two new books dealing with Indian population decline, Ann F. Ramenofsky's *Vectors of Death,* and *American Indian Holocaust and Survival* by Russell Thornton, offer diverse yet complementary insights into the devastation of New World peoples occasioned by the white man's arrival. Drawing upon a rich

source of secondary reports, Thornton captures the general phenomenon of Indian population loss and recovery from 1492 to the 1980s. Ramenofsky interprets fresh archaeological data in modifying traditional views on the effects of European epidemic diseases on American Indians from the earliest contact period.

These works are different in approach and design. Ramenofsky's detailed formula analysis adds needed archaeological dimension to the historical record. Rejecting population estimates advanced by the American Historical School of anthropologists, and modifying the position assumed by revisionist ethnohistorians, Ramenofsky's findings support the latter in arguing the existence of a large pre-1492 Indian population base.

Ramenofsky's method is convincing. Judging archaeological records and historical documentation as distinct research tools, the author separates the data from each discipline in reaching her conclusions on the affects of epidemic diseases on Indian demography. This approach allows independent analysis of intrinsic data in each field, while facilitating mutually supportive conclusions. Through charts, tables, and statistical formulas, the author indicates the existence of a large pre-Columbian Indian populaton devastated by the introduction of European diseases.

Working the higher ground of American Indian demise, Thornton addresses the *general* causes of aboriginal depopulation: disease, genocide, forced migrations, reservation policies, environmental depletion, and urbanization. Using government documents, secondary accounts, statistics, and Indian citations, the author constructs a compelling saga of nineteenth-century population loss and twentieth-century resurgence.

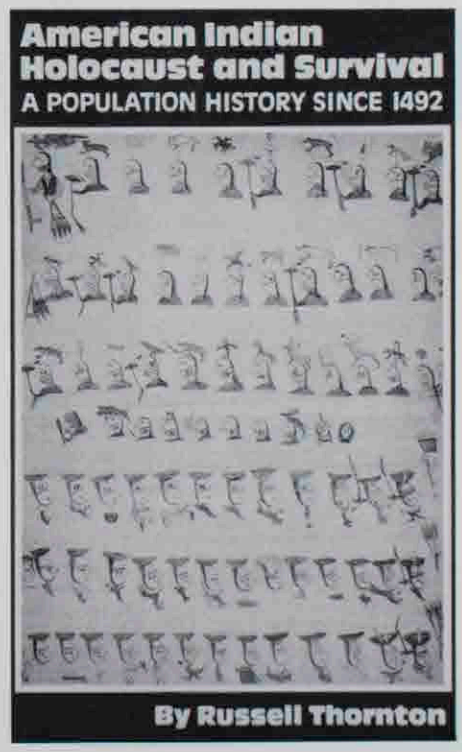
Thornton balances statistical information and objective analysis with a compassion for the Indians' emotional and religious responses to their impending doom. *American Indian Holocaust and Survival* depicts people caught between stoic resignation and acute physical crisis. In one insightful chapter Thornton relates the phenomenon of the "ghost dances," native expressions of hopeful messianic deliverance from the curse of the white man.

Thornton joins the mainstream of current anthropological thinking in attributing large numbers to North American tribes prior to European contact. The author highlights the late eighteenth and nineteenth centuries as particularly grave periods of population loss. The frightful effects of smallpox, cited as the most deadly of the epidemic disorders, illuminates the full impact of the European presence in North America. Extending theories of sixteenth-century pre-contact devastation to the nineteenth century, Thornton argues that many Indians of the later period also died of epidemic diseases before ever seeing Europeans.

The author places familiar genocidal episodes (Chivington's Raid and Wounded Knee) in proper focus by documenting lesser-known massacres and the Indians' dismayed reactions to the white man's wrath. The book closes with timely information on the erosion of Indian distinctiveness through intermarriage and the threat to tribal values posed by increasing urbanization.

Thornton empathetically recounts the many calamities that brought the nineteenth-century American Indian to near extinction. Despite encouraging population increases of the present century, the author warns against the subtle influences still militating against Indian uniqueness in an urban world.

William L. Cumiford
Assistant Curator,
History Division



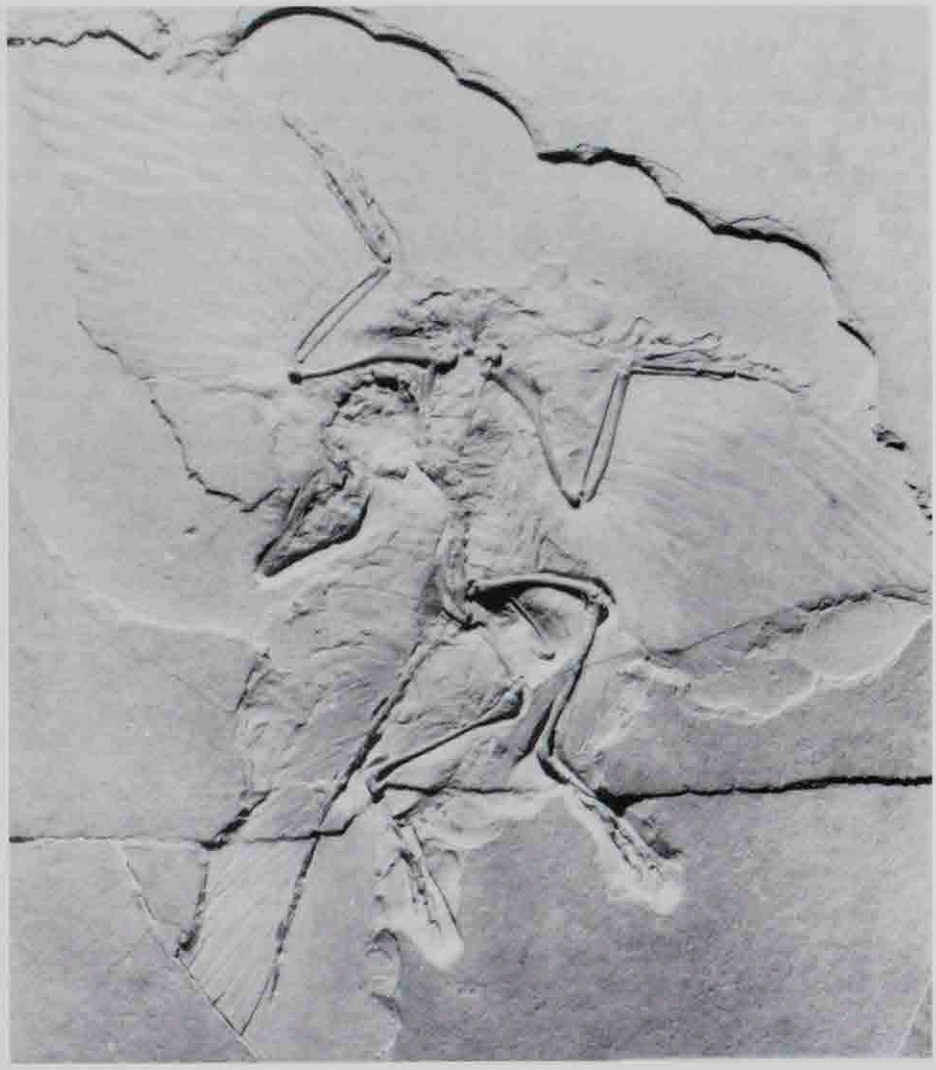
EARTH SCIENCES

The Commercial Exploitation of Fossils—An Unrenewable Natural Resource. The museum's Earth Sciences division has perceived a disturbing increase in the sale of fossils. We have become increasingly concerned about commercial exploitation of unrenewable fossil resources, particularly those bearing vertebrate fossils. This is not because we wish to acquire all the specimens for our own collections, but because we don't want the information that they can provide about prehistoric life on earth to be irretrievably lost.

The Natural History Museum's extensive collections of vertebrate and invertebrate fossils are conserved in public trust for future generations. Important and spectacular specimens, such as the *Tyrannosaurus rex* skull in the museum's foyer, are placed on public display; the remainder are available for study by members of the international scientific community.

Although there are some sites in California and elsewhere that have yielded vertebrate fossils in large quantities, fossil bones and teeth are rare and complete fossil skulls or skeletons are very rare. Every new fossil specimen has the potential to add significantly to our understanding of life in the past and the environments in which such life existed. The context in which fossils are found is often crucial to the correct interpretation of the fossil evidence and such information could be lost forever unless both the fossils and the details of their context are properly collected and permanently preserved.

Professional paleontologists do not consider the discovery and collecting of fossils to be our exclusive domain. Many important finds continue to be made by amateurs or are chance discoveries made by members of the public (see "Curators and Collections," September/October 1987). It is vital that new fossil occurrences be reported to the staff of appropriate museums, universities, or similar institutions so that their importance can be evaluated. If the fossils do prove to be important, we urge that they be donated to an institution that can take proper care of them and make them available to appropriate specialists for study. Many such institutions, ours included, can make replicas of fossils that are almost indistinguishable from the original specimen and will provide a replica in exchange for the original specimen.



A new Archaeopteryx *fossil has recently been identified; it will be discussed at the museum's upcoming symposium on avian paleontology. Photograph courtesy Dr. John H. Ostrom, Peabody Museum.*

The staff of the Natural History Museum is available to evaluate fossils that have been discovered or to recommend sources of information closer to the site of discovery. We encourage the participation of all who appreciate and share our concern for fossils, the priceless relics and only record of the history of life on our planet. All people should feel that they have a part to play in the preservation of fossils and the knowledge that these can provide for our future generations.

Fossil Bird Symposium. *Archaeopteryx,* long heralded as the "missing link" in the evolution of birds from reptiles, is probably the world's most famous fossil bird. Often described as a toothed lizard with feathers. *Archaeopteryx* has fascinated paleontologists and ornithologists since the first specimen was discovered in 1861. The most recent discovered specimen, the sixth, was found in 1987.

Dr. Peter Wellnhofer, Hauptkonservator at the Bayerische Stattssammlung für Palaontologie und historische Geologie in Munich, West Germany, is a widely recognized world expert on *Archaeopteryx* and is responsible for the study of the newly discovered specimen. He will be presenting a lecture on *Archaeopteryx* October 1 at the conclusion of the II International Symposium of the Society of Avian Paleontology and Evolution, which is being hosted by the museum September 28–30. Dr. Kenneth E. Campbell, Curator of Paleontology at the Natural History Museum, will present a brief summary of exciting new discoveries of fossil birds presented at the symposium and a survey of the world's most intriguing and exotic extinct birds. Please call 213/744-3342 for more information on Dr. Wellnhofer's October 1 lecture.

HISTORY

New Chief Curator of History Appointed. Dr. Craig C. Black, Director of the Natural History Museum of Los Angeles County, recently announced the appointment of Dr. Janet R. Fireman to the position of Chief Curator of the museum's History Division. In accepting this position, Dr. Fireman said she welcomes the challenge to work closely with the museum's staff to improve operations and to present the important American history collections to the public.

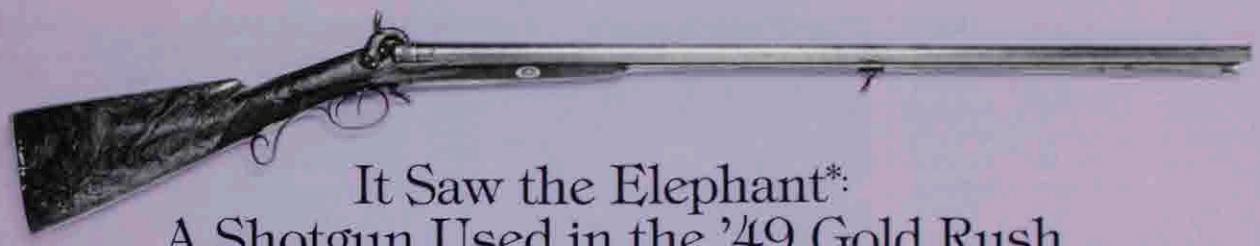
Dr. Fireman began work at the Natural History Museum in 1976 as Associate Curator of Social and Cultural History. Before that time, she was a professor of history at California State University, Fresno. She earned her B.A. in history and Spanish at the University of Arizona, and her M.A. and Ph.D. in American history at the University of New Mexico. Dr. Fireman has conducted research in Mexico and Spain and is a recognized specialist on the Spanish

Continued on page 30

Dick Meier

Dr. Janet Fireman

Recent Acquisition



It Saw the Elephant*: A Shotgun Used in the '49 Gold Rush Comes to the Museum

Charles Louis Ducommun traveled a long way to join the California Gold Rush; he was born in Besançon, France, on November 15, 1820, and was raised in Switzerland. Seeking a better outlet for his talent as a watchmaker he sailed in December 1840 for New York. He survived a small pox epidemic shortly after his arrival, but he was weakened and blind in one eye, and his search for a mild climate took him to the South. Ducommun caught the excitement of "gold fever" and left for California in 1848 from Fort Smith, Arkansas, where he bought a German muzzle-loading 20-gauge double-barreled percussion-type shotgun.

Don Meyer

Exactly how the gun came to Fort Smith is unknown, but it was manufactured in Herzberg am Harz, Germany, by E. A. Stormer, a well-known gun maker. It is marked with the date 1847 in several places, so it had plenty of time to get from Germany to Fort Smith where Ducommun bought it. The shotgun was a good choice of firearm for Ducommun; it was a well-made gun and unlikely to get out of order on the long trek west. (The gun shows evidence of considerable use, but none of having been repaired.) A shotgun was also most suitable for a man with Ducommun's impaired vision because the spread of the shot compensated for his handicap.

Ducommun crossed the Southern Trail in ten months on foot; he then went north to the diggings on the American and Feather rivers, but his luck wasn't very good. He returned to Los Angeles in 1851, where he founded the watch repair shop that would eventually become the city's oldest continuously operating business (see "Curators and Collections," page 30).

The rifle was donated to the museum by Ducommun's grandson Charles E. Ducommun, along with an outstanding collection of documents and artifacts relating to the history of the Ducommun Corporation.

Konrad F. Schreier, Jr.
Research Associate, History Division

*The term "it saw the elephant" derives from a popular Gold Rush expression. Most of the elephants in the United States belonged to showman Phineas T. Barnum. His pitch for the rare beasts ran: "You pay your money, you take your choice, you see the elephant. . . ." California-bound gold seekers adopted the last line as "gone to see the elephant," meaning they were off to the gold fields.

Continued from page 28

Southwest. She is the author of a book, *Spain's Royal Corps of Engineers in the Western Borderlands; Instrument of Bourbon Reform, 1764–1815,* and numerous articles and reviews on Western history. She serves on the editorial boards of several professional journals, including *Western Historical Quarterly, New Mexico Historical Review, Journal of San Diego History,* and *The Californians.*

At the museum, Dr. Fireman has been very active in the History Division's exhibition program. She recently served as co-curator of the museum's multi-disciplinary exhibition, *Gold: The Quest for New World Riches,* and as curator for three exhibitions dealing with the history of the film industry, including *Hollywood: Legend and Reality.*

Dr. Fireman's current research interests include material culture of the Southwest and eighteenth-century exploration and discovery along the Pacific coast of North America.

Donald Chaput, who has acted as Chief Curator during the past year, has assumed Dr. Fireman's position as head of the General Americana section and as assistant head of the History Division.

Outstanding Los Angeles History Collection Donated to Museum. The Ducommun family has donated to the History Division of the Los Angeles County Museum of Natural History an outstanding collection of documents and artifacts relating to the history of the Ducommun Corporation, Los Angeles's oldest continuously operating business (see "Recent Acquisitions," page 29). Charles E. Ducommun, past president and chairman of the board of the corporation and grandson of its founder, Charles Louis Ducommun, presented the gift to the museum.

Ducommun Incorporated dates from 1849, the year that Charles Louis, a young immigrant from Locle, Switzerland, arrived in Los Angeles after crossing the difficult and dangerous Santa Fe Trail. Ducommun established a small watch repair shop on Commercial Street that soon grew into a flourishing general merchandising store. The shrewd Swiss merchant showed a talent for supplying the demands of young Los Angeles—and at prices that ensured a healthy profit. His store earned a reputation for carrying virtually everything. Within its walls could be found glass eyes, pistols, books, stationery, watches, pruning shears, whips, and ropes; in short, nearly anything the residents of a growing frontier

Charles Louis Ducommun in the late ninteenth century. Photograph Seaver Center for Western History Research.

town might need or want. On one occasion a customer tested Ducommun by asking for a pulpit. The enterprising merchant found one in his basement.

Ducommun became a major figure in the expanding frontier town. He invested heavily in real estate. He was a director of the Los Angeles water company, the Main and Agricultural Park Railway, the Pioneer Oil Company, and a founder of the Farmers and Merchants Bank (now Security Pacific National Bank). He died on April 3, 1896, at the age of 76.

Control of the business passed on to the founder's sons. In 1907 it incorporated as the Ducommun Hardware Company, and the company grew with Los Angeles. Today, Ducommun, Incorporated is a giant international firm specializing in electronics products for the aerospace industry.

The Ducommun gift is of great historical significance: it documents not only the history of the Ducommun Corporation, but that of the economichistory of southern California in general. Of great value to scholars is the large collection of account books, ledgers, and other records that record the business transactions of the company until its incorporation in 1907. Artifacts in the collection include the double-barreled percussion shotgun Charles L. Ducommun carried across the Southern Trail in 1850. The donation also includes a large grandfather clock manufactured in Liverpool in 1820 that graced the Ducommun place of business for many years. In 1876 the city council declared Ducommun time the official time of Los Angeles. With the donation was an important collection of deeds and other records pertaining to the Ducommun family. These materials had been on deposit with the Historical Society of Southern California. Dr. Thomas F. Andrews, HSSC Executive Director, helped facilitate this transfer so that the scattered records of the Ducommun family could be brought together in one place.

Charles E. Ducommun, a member of the third generation of this illustrious Southern California family, is a longtime supporter of the Natural History Museum. Born in 1913 in Los Angeles, Mr. Ducommun received an A.B. from Stanford University in 1935 and an M.B.A. from Harvard in 1942. He served as a director of Ducommun Incorporated from 1938 to 1986 and its president from 1950 to 1986. Like his grandfather before him, he is very active in civic and community affairs. He has served on the boards of several other southern California businesses and is a trustee of Claremont McKenna College, Stanford University, and the Los Angeles County Museum of Art.

LIFE SCIENCES

Marine Mammal Program Receives Grant and Proceeds of Cousteau Lecture. The National Science Foundation awarded a $52,000 grant for curation and facilities improvements at the museum's Marine Mammal Lab. This off-site facility houses the research collection of marine mammals and other large mammals. The grant will pay for staff to prepare collections and purchase equipment necessary to move and store whale skulls and other large research specimens.

Last April, Jean-Michel Cousteau presented a lecture at the museum with all benefits going to the museum's Marine Mammal Stranding Program. As a result of Jean-Michel's kind offer, the Stranding Program received $4,000, which will be used to gain further insights into the biology of whales and dolphins by examining animals stranded along southern California beaches. We thank Jean-Michel and the Cousteau Society for their interest and support of the Stranding Program.

Tom Lewis, seen curating a Bryde's whale skull, was hired through a National Science Foundation grant to prepare specimens of marine mammals and other large mammals in the museum's Marine Mammal Lab. Photograph by Don Meyer.

Entomology Section Honors Nils Westerland: A Half-Century of Donations. The earliest insect specimens in the museum that were collected by Nils Westerland bear the label "Bouquet Canyon, Los Angeles Co., California, 1937," while the most recent specimens donated by this collector from "Ward Creek, 2 miles south of Tahoe City, Placer Co." are dated 1987. A father-son legacy? Indeed not. Rather, the Entomology staff may have just stumbled onto the longest-running record of donations by a single individual in the museum's history. As the museum celebrates its seventy-fifth birthday, it seems particularly timely to recognize a half-century of museum giving, for generous gifts such as these are the source of so many of the museum's riches.

Mr. Westerland has been associated with insects and entomologists since his childhood in Bellingham, Washington, where he was born in 1906. There he collected with J. F. ("Jack") Gates Clarke, now retired as a lepidopterist from the Smithsonian Institution. Nils moved to the Los Angeles area in the early 1930s, and, after working for five years at a service station on the corner of Sunset and Vermont in Hollywood, he became a forest guard for the U.S. Forest Service, stationed at the Bouquet Canyon Ranger Station in Los Angeles National Forest. While driving home one night in 1936 he encountered our museum's lepidopterist, Dr. John Adams Comstock, hunched over a Coleman lantern and bedsheet, collecting moths attracted to the light. The following year Lloyd M. Martin, another lepidopterist, began working at the museum (where he went on to become the curator of Lepidoptera until he retired in 1969); Mr. Westerland met Mr. Martin on one of his early forays to Bouquet Canyon in the company of Dr. Comstock, and thus began a friendship and collecting relationship that lasted until Mr. Martin's death in 1982.

After a five-year stint in the Forest Service Mr. Westerland left to become a gauge maker in a machine shop until 1945, when he began working for the County of Los Angeles in the Surveying and Engineering Division, where he remained until retiring twenty years later. Retirement was too boring, however, so he became chief inspector of heavy equipment for the City of Salinas, California, a position he held until retiring again, and for good, in 1972, when he and his wife Florence bought a house on Ward Creek, two miles south of Tahoe City on the northwest corner of Lake Tahoe in Placer County, California.

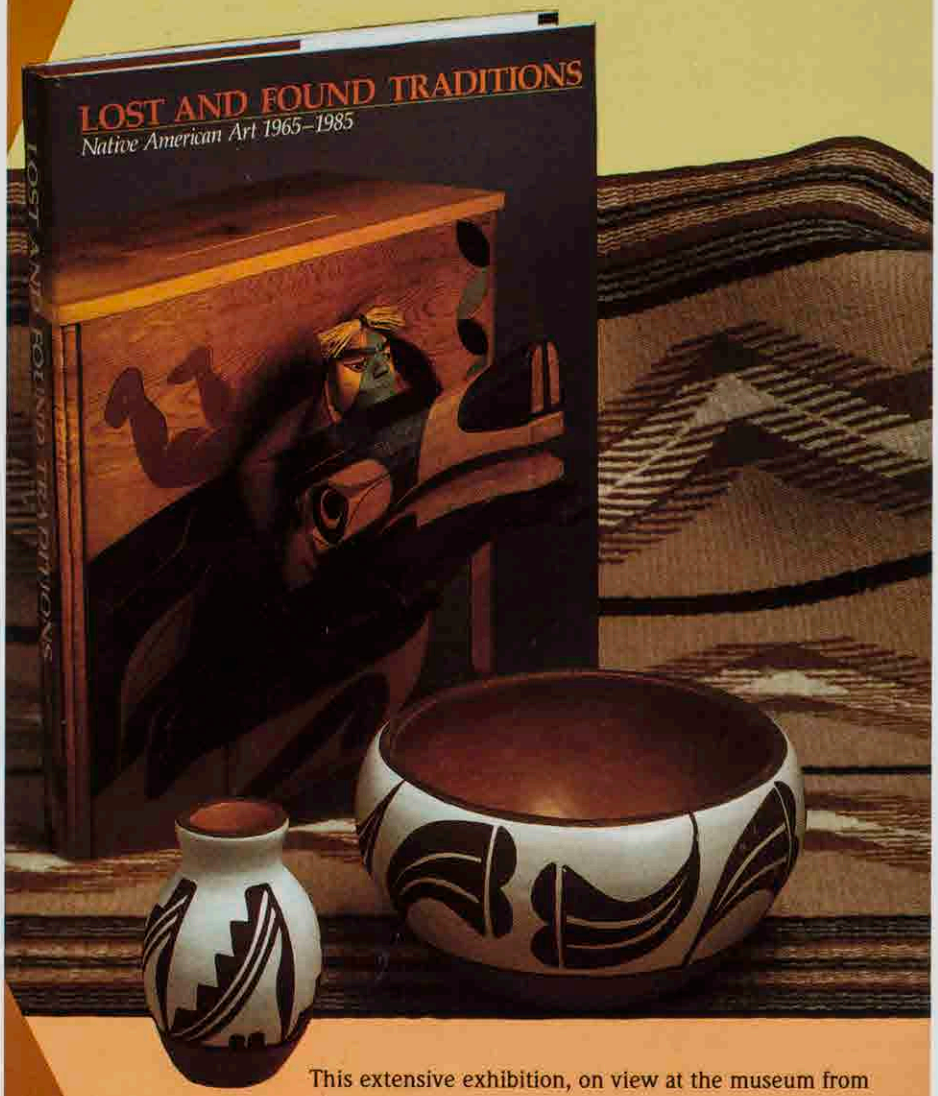
Mr. Westerland collected insects occasionally and sporadically after leaving Bouquet Canyon, but he began intensive collecting on a nightly basis after moving to Tahoe. Every year he gives the museum several thousand insects, mostly moths, already pinned and labeled and ready for incorporation into the research collection. Mr. Westerland has a good eye for the unusual, so his collections concentrate on the less common species. Ever receptive to special requests, he has recently been emphasizing the smaller, less frequently collected species, in addition to winter stoneflies and caddisflies. This prolonged dedication to furthering our knowledge of Sierran insects has paid off handsomely with the discovery of several new species of insects, with more to be discovered as his specimens are gradually studied and identified by specialists, not to mention the many distribution records and rare species that would otherwise be unknown to science.

The museum, and scientific knowledge, are approximately one hundred thousand specimens richer as a result of Nils Westerland's unflagging enthusiasm. The museum is honored, and a bit stunned, to recognize his milestone achievement of fifty years of giving.

Nils Westerland, fifty-year donor to the museum's Entomology Section, describes the one that got away. Photograph by Julian Donahue.

Exhibition Catalogue Available

LOST AND FOUND TRADITIONS: Native American Art 1965–1985



This extensive exhibition, on view at the museum from October 8 through December 11, 1988, highlights the diversity and richness of American Indian traditional art forms during the last twenty years. A beautiful, fully illustrated 288-page catalogue documents each piece in the exhibition and offers introductory essays and background information on the artists. Available in the **Museum Bookstore** or by calling 213/744-3434. Softcover: $23.75

Also pictured above is the work of Gladys Paquin, whose pottery is featured in the exhibition. Work by Ms. Paquin and other exhibition artists will be available on a limited basis in the **Ethnic Arts Shop** during this exhibition.

Natural History Museum of Los Angeles County
900 Exposition Boulevard, Los Angeles, CA 90007